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PROGRESS

Town Council of Benoni

ANNUAL REPORT

of the

Medical Officer of Health

For the Year

1st of July, 1936—30th of June, 1937

o O o

"THROUGH EDUCATION TO HEALTH"

Geo. Constable Ltd

C. C. P. ANNING, M.A., M.R.C.S., D.P.H.
MEDICAL OFFICER OF HEALTH
MEDIESE GESONDHEIDSBEAMPTE

All Correspondence to be directed to Medical Officer of Health

Al Korrespondensie moet gerig word aan die Mediese Gesondheidsbeampte

P.O. BOX / POSBUS 522
TELEPHONE / TELEFOON 638

MUNICIPAL HEALTH DEPARTMENT,
PUBLIEKE GESONDHEIDSDEPARTEMENT,

BENONI.

REF.

WITH THE COMPLIMENTS

OF THE

MEDICAL OFFICER OF HEALTH.

MET DIE KOMPLIMENTE

VAN DIE

MEDIESE GESONDHEIDSBEAMPTE.

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Town Council of Benoni

ANNUAL REPORT

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Medical Officer of Health

For the Year

1st of July, 1936—30th of June, 1937

* * *

"THROUGH EDUCATION TO HEALTH"

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1936-37

PUBLIC HEALTH COMMITTEE
OF THE
TOWN COUNCIL OF BENONI

1936-1937

Councillor Mrs. S. A. HILLS (Chairman).
His Worship the Mayor, Councillor G. H. LAUNDER.
Councillor J. H. GREIJBE.
Councillor T. HEWITT.
Councillor M. NESTADT, M.P.C.
Councillor T. NEWBY.
Councillor G. T. PARKER.
Councillor G. P. VAN ROOYEN,
Councillor G. A. WATT.

To Her Worship the Mayor,
and Members of the Town Council of Benoni.

Your Worship, and Gentlemen,—

I have the honour to present to you my first Annual Report dealing with the health and sanitary condition of Benoni during the year ending on the 30th June, 1937.

The delay in its presentation is regretted, but this delay has been due to the continued absence of certain statistical information dealing with the age-grouping of the Native population. These details are still unobtainable but will be presented in the Report for the year ending 30th June, 1938, which will be prepared for your consideration during the next two months.

It is with sincere appreciation that I acknowledge here the generous aid which your retiring Medical Officer of Health, Dr. R. P. McNeil, has given to me since my arrival; and I would record also the continual and willing assistance which Mr. W. H. Martin, until the 30th March, 1937, your Chief Health Inspector, has offered to me and which I have gladly accepted.

The staff of this Department has responded with keenness and efficiency to the many calls made upon their patience and their time, especially outside the regular office hours.

May I finally express my gratitude for the support which you, Madam Mayor, as Chairman of the Public Health Committee during the year under review, the other members of the Committee, and the Town Clerk, have given to me and to the Department.

I have the honour to be,
Madam Mayor and Gentlemen,
Your obedient servant,
C. C. P. ANNING,
Medical Officer of Health.

27th June, 1938.

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INTRODUCTION.

This Report upon the health and sanitary condition of the Municipality of Benoni for the year ending on the 30th of June, 1937, is prepared in compliance with the requirements of the Public Health Act, No. 36 of 1919.

It provides a record of the work done by the Benoni Health Department during 1936-1937 to improve the the health of the people, to prevent the spread and the occurrence of disease, and to improve the environment of the people. In the hope that this story will prove readable to the general public, all statistical evidence has been included in the second half of the report. But these numerous tables do serve an essential purpose since they provide, in a simple form year by year, the definite facts and figures upon which will be assessed the health of the town and results obtained by the Municipal health services in return for the moneys spent upon them from the civic chest. The current death returns may be exactly compared with those given in "Health Facts and Figures, Volume I.," which was published by the Department in June, 1937, and contains all death returns for the five-year period, 1931-1936.

This Report must, of necessity, deal mainly with the preliminary steps taken to re-organise the Department during its first year under the control of a full-time Medical Officer of Health. Before the complete plan can be put into action it is necessary first to enquire carefully into the various factors, local and general, which may affect the health of the people. Therefore this year has mainly been occupied with a survey of all sectors of the front. and with the laying of plans for the forthcoming attack rather than with any concerted action along the whole field of battle — though several significant sorties have already been made into the enemy camp, into the valleys and dark corners where disease and ill-health hold sway.

It has been considered suitable, therefore, to give a brief account of our plan of campaign, and the reasons which led to its adoption. But the Report also details the evidence collected during the year regarding the health of the people, and the actual steps taken by the Department to control infectious disease, to safeguard the foodstuffs of the town, to prevent the spread of vermin, to supervise the sanitation of the area, and so on.

The general picture which emerges from the report is of a rapidly developing town, enjoying a healthful climate, blessed with a sound financial position, and attracting to its busy streets and suburbs a youthful and comparatively healthy population. In spite of the rigours of the mining industry which provides employment for so large a section of the male population, as regards the European section we can justifiably claim " Benoni for Health " as a true slogan. The death rate of 8.54 deaths per 1,000 population, as compared with 8.92 in 1931-36, the high birth rate of 26.91, and an infantile mortality rate of 54.67—all these offer undisputable evidence of the good conditions existing for Europeans in this thriving Reef town, of which a brief history was given in "Health Facts and Figures, Volume I." The health record of the large and youthful Native population employed and resident on the mines is also most satisfactory, judged by the low death rate of 7.15 as compared with one of 7.92 in 1931-36.

It is only when we come to the sickness and death returns of the non-Europeans living in the Locations and elsewhere away from the mines that the evidence supplies a picture of a most unhealthy population. But even to this section of the people 1936-1937 has brought hope and decreased sickness—a happier position which has undoubtedly been brought about in some part by the urgent steps, described later, which were taken by the Deparment during the year to combat the causes of preventable disease among all sections of the population, and among the most needy Location peoples particularly. The Location Native death rate has fallen from 37.78 in 1931-1936 to 24.00 during the year just ended, while the death rate among Coloureds has improved from 28.61 to 19.25. Those reductions have been largely due to a halving in the number of deaths due to those acute bowel infections which come from germs living in dirt — infections like enteric, enteritis, and dysentery. There is some cause to believe, therefore, that the newly-planned war against dirt in Benoni during the year just ended has given an immediate return in the form of human lives saved, and in pain, suffering, and economic loss of sickness reduced.

The returns for 1936-1937, now given in this Report, are especially cheering in that they offer every reason for optimism regarding the future health condition of all races in Benoni. Even now, at this early stage in our organised health development, there is most suggestive evidence of the results which will be achieved when the campaign now being launched has had time to bear with full effect upon the various factors which at present cause ill-health, sickness, and preventable death in Benoni.

AN OUTLINE OF THE FUNCTIONS AND FUTURE SCOPE OF THE BENONI HEALTH DEPARTMENT.

In South Africa the duties of a Local Authority as regards health organisation are defined in Section 10 (1) of the Public Health Act, No. 36 of 1919, which reads:—

> "It shall be the duty of every local authority, in respect of its district, to take all lawful necessary and under its special circumstances reasonably practicable measures, for preventing the occurrence or dealing with any outbreak or prevalence of any infectious, communicable or preventable disease, to safeguard the public health, and to exercise the powers and perform the duties in respect of the public health conferred or imposed upon it by this Act or by any other law."

Within the confines of those 78 words lie the formal limits for the activity of a Municipal Health Department. Into them may be read little or much. It may indeed be said that it is only necessary for the Department to provide an efficient service for the discovery and isolation of cases suffering with infectious disease, and for the control of sources of such infections; to abate nuisances as they occur; and to improve the environment of the people in so far as it may affect their health.

Such services are essential and, in fact, form a considerable part of the work undertaken in towns to-day where a minimum of sanitary efficiency has not yet been achieved. We have still to provide many homes fit for the healthy existence of the Benoni residents. We have still to remove a great many nuisances which give rise to fly-breeding, to rat infestation, to bad smells and fouler atmospheres in many rooms. There are infectious diseases like smallpox and measles and whooping cough and enteric fever to be controlled. There are foodstuffs to be protected from germs and dirt. In this report is recorded the actions which the Department has taken during the year to carry out these duties.

But the modern health department, accepting these responsibilities to the full, goes far ahead of measures merely to improve the environment of the people. It reads into those 78 words a far broader sense of responsibility to the public. It recognises that in "safeguarding the public health" it has a duty to create health in the community, and to forge and temper the sword of knowledge with which the individual citizen himself may forestall the advance of disease and ill-health. This function of a health department Benoni, whose civic motto is "Progress," has directed along the avenues of health education. The department's motto has become "Through Education to Health," but it is fully realised that education cannot be forced down the throats of the people—they must demand education for themselves. First must be aroused an interest in health matters; and, having aroused the interest, we must be ready to supply exact and interesting information in health and disease to all who ask for it.

In this report will be recorded the steps we have taken to develop this aspect of our activities—by arousing interest, and by assisting those, from housewives, social workers, school teachers and medical men to butchers, dairymen, hotel keepers and market gardeners, who have required specialised health knowledge whether for the creation of health in themselves as individuals or for their assistance in the task of safeguarding the lives and supplies of the public.

It has been particularly necessary that, during the first year of our reorganised health work in Benoni, we should do everything possible to arouse the interest of the people in individual and public health matters. The people of Benoni still think of the doctor as one who attends to them when they are sick; the idea of a "health doctor" is still strange. But, gradually, our approach to health and disease becomes modernised; the individual begins to think in terms of health rather than of sickness, and the health department begins to act in terms of the public well-being (by taking into account poverty and ignorance as factors affecting the public health) instead of being merely an organisation controlling the incidence of public disease and death.

According to the law of this land, the Municipality undertakes only preventive health services, and does not undertake any curative services save the treatment of venereal disease, tuberculosis, enteric fever and other infectious diseases where such treatment is necessary to prevent the spread of disease. All treatment of other sickness devolves upon the private medical practitioner—for those patients who can afford to pay—and upon the District Surgeon and the Benoni-Boksburg Hospital Board for all indigent persons.

The replanned activities of the Benoni Health Department in 1936-1937 include:—

1. The collection of basic information—in the form of exact statistical evidence of birth, death, and sickness records, and of social and economic records dealing with housing rents, incomes, cost of living, etc., which through poverty affect the public health.
2. Health education, which is bound up very closely with each of the following.
3. Infectious disease control and prevention, through discovery and isolation of cases, removal of causes predisposing to infection, the treatment of venereal disease at clinics, and the immunisation of the people against specific infections.
4. Protection of the public food supply against adulteration and chemical and bacteriological contamination.
5. Protection of the public from evils arising as the result of an insanitary and unhygienic environment, including housing, drainage, water supply, etc.
6. Safeguarding and assisting the health of the future generations through ante-natal and infant clinics, and other maternal and child welfare services.
7. Protection of the health of Council's employees by examination on their entrance of all temporary workers, and by the provision of medical attention for all Municipal Native employees living in the Municipal Compound.

REPORT "A"

I.—VITAL STATISTICS.

1.—POPULATION (Pages 60, 61.)

The quinquennial census was taken in May, 1936, and the figures now given are based on the returns supplied by the Director of Census and Statistics, Pretoria. It is regretted that age-group figures for the Native population are not yet available and that standardised death rates for the various racial groups cannot, therefore, be presented. Consequently it is impossible to contrast, other than broadly, the death rates among Europeans with, for instance, those for Mine Natives who comprise a younger population, mostly in the 15-40 year age groups, or with those for other Natives who, again, make up a somewhat younger group than the Europeans and who, therefore, tend to suffer more frequently from those diseases which specifically affect the younger age groups.

In contrast with South African towns away from the Reef, the European population itself is more youthful, 80.6% of all Europeans in Benoni being under the age of 45.

As compared with the mean population for the period 1931-1936 (see "Health Facts and Figures, Volume I.") the European population has increased by 1,851, the Mine Natives by 4,714, other Natives by 1,660. Coloureds by 226, and Indians by 9. A total increase of 8,460.

2.—BIRTHS (Pages 61, 62).

The incomplete registration of Native births, which is gradually being overcome by the joint action of this Department and the Location Superintendent, still renders any Native birth rates most unsatisfactory.

In 1936-1937 the European birth rate showed a significant rise after the falling rate noted in previous years. With a birth rate of 26.91 births per 1,000 population compared with 22.43 in 1931-1936, and of 107.5 births per 1,000 women of child-bearing age, Benoni is in a fortunate position. Male births outnumbered females in the proportion of 105 to 100. Illegitimacy was infrequent, accounting for only 1.23% of all European births. European birth rates in other towns were: — Cape Town, 17.02; Maritzburg, 17.69; Bloemfontein, 19.42; Kimberley, 20.8; Pretoria, 23.94; Johannesburg, 25.36; Benoni, 26.91; Boksburg, 28.69; Germiston, 30.18; Springs, 34.1; Krugersdorp, 34.2.

Births among residents in the Native Location were more satisfactorily registered during the year—a total of 345 births being registered in 1936-1937 as compared with 692 in five years from 1931 to 1936. So notification is improving, but the current birth rate of 20.68 is certainly an under-estimate. Illegitimacy accounted for 52.7% of all Location Native Births, but the different standards of computation of legitimacy and of "marriage" among the urban Native people must be borne in mind.

Coloureds and Indians showed an increasingly high birth rate, 49.20 and 44.83 respectively. 40.2% of all coloured births were illegitimate, whereas only 4.7% of Indian births were so described.

3.—DEATHS (Pages 63—67).

These rates should be contrasted with those for 1931-1936 (see "Health Facts and Figures. Volume I.") They show, throughout, a most gratifying decrease, most apparent for the Location Natives among whom the death rate has fallen from 37.78 (in 1931-1936) to 24.00 deaths per 1,000 population; though the new figure is still nearly three times as great as that for the European population, which is 8.54.

The European death rate has fallen from 8.92 in 1931-1936, and it compares favourably with similar rates for other towns:—Bloemfontein, 7.52; Springs, 7.91; Pretoria, 8.02; Benoni, 8.54; Maritzburg, 8.56; Kimberley, 9.36; Krugersdorp, 9.58; Cape Town, 9.68; Johannesburg, 10.25; Boksburg, 10.53; Germiston, 11.66.

The death rates, for all races in Benoni during 1936-1937, show clearly that an advance has been made during the year in the war against the major captains of the battalions of death, except only as regards tuberculosis and cancer, which increase as causes of death.

	DEATHS PER 1,000 POPULATION	
	1931-1936	1936-1937
1.—Lung Diseases (non. T.B.)	4.31	3.17
2.—Diarrhœa & Enteritis (under 2)	2.57	1.35
3.—Violence	1.21	1.10
4.—Infancy and Cong. Malformations	1.18	1.10
5.—Disease of Heart	0.91	0.69
6.—Other Infectious Diseases	1.29	0.79
7.—Enteric Fever	0.79	0.32
8.—Tuberculosis (All forms)	0.80	0.84
9.—Cancer	0.28	0.31

Detailed information regarding each of these causes of death will be found towards the end of this volume.

4.—INFANTILE MORTALITY (Pages 67—69).

The rate of 54.67 infantile deaths per 1,000 European births contrasts satisfactorily with the rate of 68.02 during 1931-1936. The rate of 538 for Natives is unsatisfactory in every way and cannot be used as an exact figure because of the incomplete registration of Native births. But the evidence given of the actual number of Native infantile deaths coupled with the fact that 45% of all Location Native deaths occurred in the first year of life, as compared with 17% of all European deaths, does offer some suggestive, though indirect, evidence that the Native infantile mortality rate is abnormally high. It is probably in the vicinity of 250-300. The Coloured rate was 174 and the Indian rate 116.

These figures, and the more detailed returns and comments on pages 41 and 68 provide sufficient evidence to prove the wide scope for preventive health measures especially among non-Europeans. Almost all these infantile deaths were due to what we may legitimately call preventable causes—including the bowel diseases of dirt and the lung diseases associated with overcrowding, both associated with poverty and ignorance.

The European infantile mortality rates compare as follows with those for other South African towns during 1936-1937:—

Pietermaritzburg, 37.63; Cape Town, 47.16; Krugersdorp, 47.98; Kimberley, 48.2; Springs, 52.38; Pretoria, 52.66; Benoni, 54.67; Bloemfontein, 65.96; Johannesburg, 66.13; Germiston, 68.48; Boksburg, 85.95.

MUNICIPALITY OF BENONI

LEADING STATISTICS

Year ending on the 30th June, 1937

	All Races	European	Native		Coloured	Indian
			Mine	Loc.		
Population	77,577	20,850	36,802	17,187	1,770	968
Birth Rate	(13·93)	26·91	(0·76)	(20·68)	49·2	44·8
Illegitimacy Rate ...	21·8%	1·23%	10·7%	52·7%	40·2%	4·7%
Death Rate	11·58	8·54	7·15	24·00	19·25	11·47
Infant Mortality Rate	(237)	54·67	—	(538)	174·00	116·2
Maternal Mort. Rate	—	5·29	—	(20·89)	—	—
Death Rates (various):						
Lung Disease (non-T.B.)	3·07	1·42	2·26	6·39	6·21	3·10
Enteritis (under 2) ...	1·35	0·19	0·19	4·95	2·67	4·17
Violence	1·10	0·47	1·71	0·64	1·06	—
Disease of Heart ...	0·69	1·00	0·11	1·15	2·14	1·04
Enteric Fever	0·32	0·14	0·38	0·41	0·53	—
Pulm. Tuberculosis ...	0·76	0·14	0·38	2·33	0·53	1·04
Cancer	0·31	0·71	0·05	0·41	—	—
Infectious Disease Incidence Rates:						
Enteric Fever	1·03	0·81	1·25	0·93	0·53	—
Pulm. Tuberculosis ...	1·08	0·24	0·95	2·27	2·26	1·03
Scarlet Fever	0·22	0·82	—	—	—	—
C. S. Meningitis ...	0·26	0·14	0·38	0·12	0·05	—
Erysipelas	0·26	0·62	0·16	—	0·56	—

All returns are corrected for outward transfers; and also for inward transfers for Benoni residents dying in Benoni-Boksburg, Johannesburg Infectious Disease, and Rietfontein Hospitals.

Native birth and infantile mortality rates are unreliable owing to incomplete registration of births

All returns, except illegitimacy rates, are expressed per 1,000 living population, or, in the case of infantile and mortality rates, per 1,000 live births.

II.—METEOROLOGICAL READINGS

(Page 59)

As an important part of the work of the Department, a Meteorological Station has been erected at the Municipal Compound, under the immediate supervision of Mr. C. R. Begley, and regular daily records were kept from May 1st. In future annual reports, the records from the Department's station will be given, but for 1936-1937 those from the nearest station—Rand Airport—are given, together with rainfall figures from the Council's Fire Station.

The new station has been erected in order that exact local records may be kept, day by day, which will provide essential information upon which may be considered the local relationship between climatic variations and sickness, such as the incidence of lung diseases in the colder months, of throat and lung infections in the drier months, of enteritis in infants in the wetter and warmer months, etc., etc.

The station stands, fenced off, in the grounds of the Municipal Compound. It is officially recognised by the Meteorological section of the Government's Department of Irrigation, and bears the official title of Station No. 8/1682. The Chief Meteorologist for the Union gave advice in connection with the instruments and their erections, and reported as follows:—

" The Stevenson screen, 5in. rain gauge and galvanised iron cylinder, Maximum, Minimum, Dry and Wet bulb thermometers are all standard instruments similar in use to those at our official Meteorological stations: these instruments are very well exposed and beautifully erected."

Further equipment is on order, but in the meantime records are kept of dry and wet bulb readings, maximum and minimum atmospheric temperatures, humidity figures, daily rainfall, wind and cloud records, and ground and visibility records.

This is the first Municipal Station to be erected in the Transvaal and it promises to provide information of the greatest interest to the Department, to the public generally, and to scholars who require instruction upon climatic conditions. The readings are posted daily at the entrance to the Municipal Offices.

Taking Germiston readings for 1936-1937 it is found that the rainfall there was fairly normal, but was 5.73 inches heavier than that recorded at the Benoni Fire Station. In Benoni the fall in the second half of the year (January—June) was only 10.33 inches, as compared with 14.58 inches in previous years.

The summer month of December was warmer than usual, and winter months at each end of the year rather warmer than usual.

III.—HEALTH EDUCATION.

Activities under this heading have been aimed mainly at the arousal of interest in specific and general health matters in Benoni, especially toward the gradual appreciation by the Public of the function of the Health Department. Most of these activities have been confined to Benoni itself. But such activities as a series of radio talks from the Johannesburg studio have reached residents in other areas as well as Benoni citizens.

Among the varied steps taken during the year have been the following:—

1.—HEALTH AND RED CROSS WEEK

In co-operation with the S.A. Red Cross Society the Department organised a health week from August 30th to September 5th. A strong local Committee under the leadership of Mr. W. H. Martin, Chief Health Inspector, gained the enthusiastic aid of the local clergy, school teachers, press, first-aid workers, etc., and large crowds of the public attended the evening lectures and demonstrations of first-aid work and of physical fitness in the Supper Room, while talks were given in all Schools and at the Location. The week ended with a parade and demonstration by the Fire Brigade of fire and gas fighting. A most successful "Abattoir Afternoon" was attended by more than 200 housewives and others who saw for themselves, clearly set out, the various cuts of meat available in Benoni, and heard a talk on diet by Miss de Key Whitsed, of the Johannesburg General Hospital; a booklet "Meat in the Daily Diet" was prepared and distributed at the meeting and later to all housewives with the assistance of the local butchers.

2.—"CLEAN HOMES" COMPETITION.

In September, 1936, the Department organised a competition, arising directly out of the Lectures given during Health Week, in which the Council offered 10 prizes of 10s. each to those householders in the Native Location whose homes showed most improvement as regards cleanliness, freedom from vermin and refuse, and pleasant appearance. On December 19th, the Hon. J. H. Hofmeyr, Minister of Education and Social Welfare, presented these prizes to the successful entrants after the houses has been judged by Sir Edward Thornton, K.B.E., Secretary for Public Health, His Worship the Mayor, Mr. G. H. Launder, the Hon. W. B. Madeley, M.P. for Benoni, and Mrs. S. A. Hills, Chairman of the Public Health and N.A. Committee. In the course of his speech, prior to distribution of the prizes, Mr. Hofmeyr said:—

" I am afraid that health conditions as far as the non-European is concerned are far from satisfactory in most South African towns. The non-European is too often the forgotten man. Sometimes vengeance has come to the community as a whole. In public health matters the strength of the chain is in its weakest link. I congratulate Benoni on improving its health services so far as the non-European is concerned. Especially along the three lines essential in any advance in public health. First, the establishment of clinics with a system of " follow up " services to co-ordinate the work of the clinics. Second, active health propaganda, for compulsion is unsatisfactory—the public must be educated into realising the importance of health to their own well-being. Third, the training of efficient non-European health officers, as achieved in Maritzburg with excellent results, who are better able than Europeans to educate and to explain such matters to their compatriots."

3.—TRAINING OF NON-EUROPEAN HEALTH ASSISTANTS.

Thinking in terms of disease prevention, and appreciating that the urban Bantu offers virgin soil for preventive work, the Council generously agreed to the training of a group of educated Bantu in elementary hygiene and sanitation. 68 applications from non-Europeans already holding the Junior Certificate, or an equivalent qualification, were received, and 3 Coloured and 8 Native students were finally selected for the course. Of these, 6 came from Benoni, 2 from Johannesburg, 2 from Alexandra Health Committee, 1 from Pretoria. The Council agreed to provide an allowance in lieu of board and rations to all Benoni students in this course. No fees were charged for the instruction which lasted from 9 a.m. to 5 p.m. daily, the mornings being occupied with lectures and theoretical instruction and the afternoons with practical instruction in the field. The aim of the course was to train suitable non-Europeans in elementary anatomy and physiology, hygiene and sanitation, from the practical rather than the theoretical aspect, so that they might be equipped, working under White supervision, to educate their fellows in the simple rules of healthy living. The course started on May 17th and was planned to last for 5 months of intensive training. At the conclusion of the current health year, i.e., on the 30th of June, it was proceeding most satisfactorily and according to plan, the students showing keenness and aptitude.

4.—TRAINING OF HEALTH INSPECTORS: TROPICAL HYGIENE

At the request of the Witwatersrand Technical College, the Medical Officer of Health started in March a course of lectures at the Springs Technical College for Health Inspectors in Tropical Hygiene. The lectures were held weekly in the evening, and the class included Inspectors from Benoni.

5.—FIRST AID: TRAINING OF MUNICIPAL NATIVE EMPLOYEES

On the 28th of September at the Municipal Compound, was started the training of 28 Municipal Natives in the course of first-aid work laid down by the South African Red Cross Society. Benoni was the first Municipality in the Transvaal to organise such training. The Instructor was Mr. Kitto, working in co-operation with the Compound Manager, Mr. Begley. On December 6th the men were examined, and 27 successfully passed the Society's examination and qualified for the Red Cross Certificate. These certificates were duly presented by Sir Edward Thornton, K.B.E. at the Compound on the 19th of December after a demonstration had been given by two of the Native teams on the treatment of an improvised motor casualty. During the year these trained first-aid workers proved their efficiency by rendering first-aid, during the course of their normal work, in 2 motor accidents, 6 minor accidents at the Municipal workshops, 2 cases of fracture and 1 of burning at the Compound, and several injuries to police boys in the Location.

6.—INDIVIDUAL HEALTH EDUCATION

An especial feature was made of the spreading of health news and views by the Health Inspectors and Health Visitors during their daily contact with individual members of the public while doing routine visits from house to house, and at the infant clinics.

7.—PRESS RELEASES.

The Press very generously assisted the work of the Department by giving space for the information of Benoni residents on many health matters. A series of 200-word articles on various subjects—including "Keeping the Rat on the Run," "Enteric Fever," "Measles and Whooping Cough," "Flies," etc., etc.—was generously displayed in the local Press.

8.—BROADCAST HEALTH TALKS.

By arrangement with the Johannesburg studio of the South African Broadcasting Corporation the Medical Officer of Health gave 24 weekly talks, in a series entitled "Health Heroes," which included such topics as "Koch and Tuberculosis," "Chadwick and Healthy Homes," "Newman and Healthy Scholars," etc., etc.

9.—POSTERS AND PAMPHLETS

Releases during the year included a striking poster, "Kill that Fly" in English, Afrikaans, Zulu and Sesuto; and various pamphlets entitled "Flies," "Say Goodbye to Enteric Fever" (these two distributed to every householder in an envelope addressed to him personally), "The Bed Bug," "Vermin," "Measles," and "Meat in the Daily Diet"—in English and Afrikaans. Broadsheets in English, Zulu and Sesuto included "Don't Live in the Dark," and "It Pays to be Clean." A series of infant welfare booklets in both official languages issued during the year included "Before Baby Comes," "The Sick Baby," and "Baby's Kit."

10.—ADDRESSES AND LECTURES

A steady feature was made during the year of talks on health subjects, and among those given by the Medical Officer of Health were:—

(i.) In Benoni:—

July 28—Benoni Rotary Club. — "Public Health Service: A Sound Investment."

August 31—September 4.—Health Week. "Keeping Fit." To all Schools.

Health Week.—"Your House," "Your Food," "Yourself" and "Your Parasites"—(4 Lectures).

Health Week.—"Don't Live in the Dark" and "It Pays to be Clean."—Lectures in Location.

September 5.—Benoni Race Welfare Society. — "Is Birth Control Necessary?"

Oct. 14-28.—Nobadula's Hall, Location.—"Flies" and "Your House."

Oct. 21.—I.O.G.T., Benoni.—"Kaffir Beer."

Nov. 25.—Supper Room.—Two Addresses by Mrs. Neville Rolfe on Social Hygiene.

Jan. 5.—East Rand Division, Med. Association. S. Africa. "Recent Trends in Tuberculosis Control in U.S.A."

Jan. 12.—Benoni Rotary Club. — "What the Other Half Eats."

Feb. 9.—Modder East Book Club.—"The Deserted Village" (T.B.)

Feb. 9.—Modder B, Toc H.—"Organised Health Help."

March 24.—Benoni Children's Aid Society.—"Weeds in the Nursery."

April 6.—Benoni T.W.E.A.—"Urban Health Problems, i."

April 20.—Benoni T.W.E.A.—"Urban Health Problems, ii."

April 20.—Benoni Epworth Home.—"Nursery Schools."

April 30. — Transvaal Student Treasurers' Association.—"Vital Bookkeeping."

May 26.—East Rand Health Inspectors.—" Health Organisations Round the World."

June 28.—Benoni Br. Nat. Council of Women.—" Health in Benoni."

(ii.) Away from Benoni:—

Sept. 2.—Krugersdorp.—Red Cross and Health Week. — " Yourself and Cleanliness."

Oct. 3.—Johannesburg. Nat. Conference Social Work. — " N.H.A.'s in Urban Areas."

Dec. 3.—Johannesburg. Witwatersrand Public Health Consultative Committee.—" What the Public Needs From a Live Health Department."

Jan. 26.—Johannesburg. Council of S.A. Institute Race Relations.—" Training of N.H.A.'s."

April 13.—Johannesburg Medical School, Society for Study of Bantu.—" Health Education among Bantu."

May. 27.—Johannesburg, S. Transvaal Br. M.A.S.A.— " Sterility and the Falling Birth Rate."

11.—FILMS.

With a view to the use of films in health education work, the Department became a member of the Union Film Library, and an " Ampro " projector with loudspeaker and microphone attached was purchased.

12.—CONFERENCES AND MEETINGS OF SOCIETIES, ETC.

The Medical Officer of Health regularly attended, as representative of the Council, the monthly meetings of the Witwatersrand Plague Committee (later the Witwatersrand Public Health Consultative Committee) accompanied by the Chief Health Inspector. Other meetings regularly attended included those of the Social Hygiene Committee, South African Red Cross Society, and of the Witwatersrand Anti-Tuberculosis Council, of which your Medical Officer of Health was elected Vice-Chairman. Also of the Reef Public Health By-Laws Committee, accompanied by the Chief Health Inspector.

The Medical Officer of Health attended the National Conference of Social Work in Johannesburg from the 30th September to the 3rd October; also the Springs Boundary Commission in October.

IV.—INFECTIOUS DISEASES

1.—GENERAL.

The total number of all infectious diseases notified during the year was 373 (page 80), of which measles (113), lung tuberculosis (84), enteric fever (80), cerebro spinal meningitis (20), and erysipelas (20) were the most common.

The Department is trying to instil into the minds of the people of Benoni the fact that infectious diseases are preventable, how they may be prevented, and what steps each citizen may take to prevent that spread. For this reason, in particular, the Council requested the Government to include measles and whooping cough (the first case in a household within 28 days) in the local list of notifiable diseases. This inclusion was duly gazetted (Government Notice No. 1737) on the 20th of November. As the result of this important step, the Department has not only been made officially aware of cases of these two diseases occurring in Benoni, but it becomes possible—by immediate visiting of all infected households — gradually to develop among the citizens of Benoni an intelligent appreciation of the significance of measles and whooping cough, diseases which have been taken too lightly in the past.

Each of the 373 cases of infectious diseases was visited by the Infectious Disease Inspector, full enquiries made and reported in writing upon the source of infection, and the relationship of the surroundings to the spread of infection; instructions were also given regarding the isolation of contacts and, where necessary, the schools were informed; while, most important of all, the significance of the infection and its mode of spread was explained to the household affected.

But the success of any attempt to prevent the spread of infectious diseases is minimised if adequate facilities are not available for the full isolation of actual cases in hospital. In many private houses it is not possible, however intelligent and willing the residents may be, successfully to isolate a patient suffering with infectious disease of the type of, for example, scarlet fever or enteric fever.

Unfortunately it has become increasingly difficult to obtain beds for such cases in the Johannesburg Infectious Disease Hospital; and though the Benoni-Boksburg Hospital Board has generously assisted the Municipality by providing isolation beds in their hospital whenever possible, a number of Benoni cases which should have been removed had, perforce, to be nursed at home. An additional disadvantage has been the absence of facilities for the steam disinfection of infected articles.

There were, therefore, ample grounds for the favourable re-consideration by the Council—in co-operation with the Town Council of Boksburg and the Board of the Benoni-Boksburg Hospital—of a scheme for the provision of adequate joint infectious disease hospital accommodation. Such a scheme was duly prepared by the Medical Officers of Health of Boksburg and Benoni. By the end of June, 1937, no finality had been reached in the matter, but an early and favourable conclusion is anticipated.

As far as Mine Native employees suffering with infectious diseases were concerned, these were efficiently isolated in the various mine hospitals.

2.—REMOVALS TO HOSPITAL

Residents of Benoni suffering with an infectious disease, were removed by Municipal ambulance and accommodated in various hospitals as follows:—

	Ben.-Bok. Hospital		Jhb. I.D. Hospital		Springkell T.B. Hos.		Rietfon. Hospital		Total	
	Eur.	Non-Eur.	Eur.	Non-Eur.	Eur.	Non-Eur.	Eur.	Non-Eur.	Eur.	Non-Eur.
Tuberculosis	—	23	—	—	3	—	—	10	3	33
Enteric Fever	4	18	—	—	—	—	—	—	4	18
Erysipelas ...	9	3	2	—	—	—	—	1	11	4
C.S. Meningitis	1	3	—	—	—	—	—	—	1	3
Measles ...	7	—	—	—	—	—	—	1	7	1
Mumps ...	—	1	—	—	—	—	—	—	0	1
Puer. Fever	—	—	—	—	—	—	—	—	0	3
Scarlet Fever	—	—	12	—	—	—	—	—	12	0
Plague Cont's	—	—	—	—	—	—	5	2	5	2
Enteric "Carriers"	—	2	—	—	—	—	—	—	0	2
Syphilis ...	—	—	—	—	—	—	8	125	8	125
Gonorrhoea...	—	—	—	—	—	—	10	9	10	9
G. C. Ophthal.	—	1	—	—	—	—	—	3	0	4
Other Veneral Diseases ...	—	—	—	—	—	—	—	2	0	2
Total ...	21	54	14	0	3	0	23	153	61	207

3.—ANTHRAX.

No case, in human beings or in animals, was reported during the year. Supervision of all possible sources of infection, including shaving brushes and hides, was carried out.

4.—SMALLPOX.

No case was reported. Vaccinations were done by the Public Vaccinator, i.e., the District Surgeon.

5.—LEPROSY

No case occurred in Benoni. One case, a Native male, was discharged from the Amatikulu Leper Institution and permitted to return to the Location as his disease was no longer active or infective. One case, a Native male, was similarly discharged from the Pretoria Leper Institution and returned to the Loctaion. Three Native males, at various times, suffering with leprosy were detained at the Municipal Compound sick bay pending removal to a Leper Institution; each of these cases was detained at the request of the Magistrate, having come from outside the Benoni Municipal area.

6.—TICK TYPHUS FEVER

Two European male cases were reported. In one the tick bite was on the neck, in the other the bite was on the arm; the infection in the former case may have been contracted in the process of "de-ticking" a domestic dog, in the latter case the infected tick was apparently picked up outside Benoni on the veld during a shooting expedition. One patient died, but the typhus infection was not the main cause of death.

7.—LOUSE-TYPHUS FEVER AND FLEA-TYPHUS FEVER

No cases were reported.

8.—ERYSIPELAS

Of the 20 cases notified, 13 occurred in Europeans and 6 in Mine Natives. The source of infection proved very difficult to discover in most instances. 1 European and 1 Coloured death occurred as the direct result of this skin infection.

9.—PLAGUE

One case of pneumonic plague was imported into the Municipal area on the 17th of September from Heilbron, Orange Free State. All persons in the house at Modder B Railway Station into which the patient had been received as a visitor were placed in quarantine and removed to Rietfontein Hospital. The house itself was adequately disinfected, and also fumigated to destroy possible vermin carriers of the infection, and all rodents in the vicinity were killed. The patient died on the 22nd of September. No further cases occurred within the Municipal area.

One Indian female, a plague contact arriving from India, was temporarily detained in Rietfontein Hospital.

10.—MALARIA

A survey of mosquitoes in Benoni revealed no Anopheles Costalis (vel Gambiae) or Anopheles Funestus—the two proved vectors of malaria infection in South Africa. No person was infected with malaria in Benoni during the year. 4 deaths due to malaria were recorded—but in each case the fatal infection had been contracted away from Benoni; these included 3 Native males on the Mines, and 1 in the Location.

11.—CEREBRO-SPINAL MENINGITIS (Page 77)

20 cases were notified, of whom 14 were Mine Natives and 3 were Europeans, all employed on the Mines. The mortality was high, 12 of the cases (60%) dying. The prevalence of this disease in Benoni is related to the preponderance of mine workers in this area, but the actual significance of this point is a matter for further investigation. In passing, it is of significance to note that the majority of these mine cases developed the clinical symptoms of the disease within a month of their arrival on the Rand.

12 and 13.—ACUTE POLIOMYELITIS AND ENCEPHALITIS LETHARGICA

Only 1 case of each of these infectious diseases was notified. Both were European female children who contracted their infections outside the Municipal area.

14.—DIPHTHERIA

Only 1 case was notified during the year, in a female European child. The low incidence of this disease, even at this high altitude, is surprising; at first glance it suggests that cases are being missed. But the presence of a considerable proportion of susceptible persons among the population, in the absence of any epidemic, further suggests that Benoni has been fortunate so far in avoiding any outbreak of diphtheria. This good fortune, judged by the experience of other towns, is not likely to continue; but now that artificial immunisation is available to protect the population against this infection it may become necessary to recommend this measure to parents in order to protect their children. In the towns of Europe, of the United States, and on the Coast of South Africa, diphtheria has become in recent years a serious public health problem.

15.—SCARLET FEVER

All the 17 cases notified were among European children, and as is usual in South Africa, the infection in each case was of a mild nature, in no instance proving fatal. In England the number of deaths per 100 cases is between 0.3 and 0.5; among the Chinese, in such a town as Shanghai, it is nearly 20%. Scarlet fever has not attacked the Native population here, as yet, but if it does spread among them—as measles begins to do—a serious position may be anticipated. Much more evidence regarding the reaction of the darkly pigmented races to this infection is required.

16.—MEASLES (Page 76)

In November this sickness was gazetted as a notifiable disease in Benoni. As a result the Department begins to have some idea of the incidence of an infection which most people take very lightly, but which, if not treated properly, may lead to blindness, persistent weakness of the chest, etc. The returns relate only to cases occurring from the 1st of December onwards, so they cannot be analysed this year. They refer only to one case from each household or compound room, and therefore do not give a true picture of the total number of cases. The 113 cases notified in the seven months may be divided into two main groups: those amongst Europeans occurring almost entirely among children, and especially school children, and those occurring in Mine Natives who, unprotected by previous exposure to infection in their home kraals, provide a fruitful nest for the measles virus when they arrive on the mines. The infective state among these adult Mine Natives is a mild one. Only 2 deaths due to measles were recorded during the year, both occurring in Native children of poor stamina living in the Location.

34 cases were notified among Europeans, and almost all had contracted infection through contact at school with cases in the early stage of development of symptoms. Many parents have yet to realise that the most infectious stage in measles occurs during the "head cold" period, when there is a running nose, sore eyes, and headache, which precedes the typical measles rash by 2 or 3 days. It is advisable that when there is measles in the district all children with "head colds" should be kept away from school for at least 3 days until the parents have made sure that the rash of measles is not going to develop.

17.—WHOOPING COUGH

Made a notifiable disease in November, only 14 European and 4 non-European cases were notified during the remaining 7 months. Yet 3 European and 6 Location Native children died from whooping cough during the year—a serious enough pointer to the necessity for strenuous action against the spread of this infectious disease. There were as many deaths due to whooping cough during the year as there were deaths registered as due to syphilis.

18.—OPHTHALMIA NEONATORUM

4 cases were notified, 2 European and 2 Native. In 3 of these the infective agent was proved to be the gonococcus and the necessary treatment was provided for the mother as well as the child.

19.—PUERPERAL SEPTICAEMIA

6 cases notified—2 European, 2 Native, 1 Coloured, and 1 Indian and 1 European and 2 Native cases died.

V.—THE ACUTE BOWEL INFECTIONS.

(Pages 72-74)

Of all deaths during 1936-1937 16%, as compared with 25% in 1931-1936, were due to acute infections of the intestines — enteritis, enteric fever, or dysentery, in that order of frequency. These diseases are the result of certain organisms swallowed in dirty food or drink, and their incidence provides a mirror of the general state of cleanliness and sanitation of the town. Though they are decreasing as a cause of death, they are still far too common. Among Europeans in 1936-1937 only 4% of all deaths were due to these diseases which are born by dirt out of ignorance, as compared with 10% in 1931-1936. Among Location Natives 25% (36% in 1931-1936), Mine Natives 9% (14%), and all non-Europeans 19% (28% in 1931-1936).

Four factors have assisted in this improvement.

Firstly, climatic conditions during the summer were slightly less favourable for the spread of bowel infections than has been usual in recent years. Secondly, the public of all races has shewn an increased appreciation of the steps to be taken to prevent the spread of bowel infections, and has, indeed, much more freely carried out these measures of cleanliness. Thirdly, there has been a marked reduction in fly breeding and an improvement in the sanitary state of dwellings as the result of the activities of this Department. Fourthly, the installation of the water carriage system of sewerage in the Township proper, together wth the provision of adequate washing facilities in all food shops has helped to achieve this gradual reduction of bowel diseases.

But 146 deaths from preventable bowel diseases are 146 too many. They prove that an individual consciousness of the fact that dirt is the mother of disease has still to be aroused among certain sections of our population, and that sanitary conditions in certain parts of Benoni are still far from satisfactory. By far the highest bowel infection death rates occur in the Asiatic Bazaar and in the Native Location.

(1) **ENTERIC FEVER** (Page 73)

In his 1935-1936 report the Secretary for Public Health placed Benoni second only to Springs in the black list of enteric (typhoid) incidence in the large towns of the Union. Indeed, as regards the European population, Benoni had a much higher incidence figure than any other town. Referring to these figures, Sir Edward Thornton wrote:—

> "Enteric fever only occurs as the result of insanitation, and therefore local authorities high up on this list have this eloquent testimony of the results of imperfect hygienic procedures in their area."

Benoni at once took up this challenge to its sanitary integrity. The result of the response is most gratifying—during 1936-1937 the enteric incidence rate was reduced for all races to 1.03 cases per 1,000 population, as compared with 2.54 in 1935-1936. The European incidence rate has fallen to one-third of the 1935-1936 rate, and the Location Native rate has been considerably reduced. Only the Mine Native enteric incidence rate is comparatively slow to fall.

Examination of the tables on page 73 will, indeed, show that during 1936-1937 enteric fever was more common in the Mine Compounds than in the Location, in spite of the better housing and sanitary control over the former. The following table, referring to the non-European population of Benoni only, shows the decreases which have occurred:—

	NON-EUROPEAN Enteric Death Rate		NON-EUROPEAN Enteric Incidence Rate	
	1931-36	1936-37	1931-36	1936-37
Town, Location, etc ...	1.38	0.41	3.20	0.93
Mines	0.79	0.38	3.35	1.25
All Non-Europeans ...	1.00	0.39	3.30	1.12

Among the local mines, Van Ryn Deep G.M. had the worst record during 1931-1936, with an incidence rate of 6.84 cases per annum per 1,000 Native employees. From September 1st, 1936, all new workers in this mine received a prophylactic (single shot) inoculation with endotoxoid vaccine (S.A. Institute for Medical Research); as a result no case occurred during the year among Natives recruited and taking up employment after the 1st of September. The action taken by the Mine Medical Officer at Van Ryn Deep G.M. (Dr. T. van der Merwe) is greatly appreciated.

As regards incidence on the various mines, as contrasted with the Town and Location, the following non-European incidence rates are of significance, especially if the fact is borne in mind that of the mines only Modder B and New Modder have a water-carriage system of sewerage, and that the Township was only connected to the sewerage system in the latter half of 1936-1937:—

NON-EUROPEAN ENTERIC INCIDENCE

(Cases per 1,000 Population)

	1931-1936		1936-1937	
Township	0.94		0.63	
Locations	4.06		0.96	
Semi-Rural Areas	2.12		0.00	
Outside Mines ...		3.20		0.93
New Kleinfontein G.M.	1.35		0.63	
Van Ryn Estates G.M.	2.47		2.91	
Modder Deep G.M. ...	1.98		1.06	
Van Ryn Deep G.M. ...	6.84		1.30	
New Modder G.M. ...	2.82		1.30	
Modder B. G.M.	3.36		0.18	
Mines		3.35		1.25
TOTAL		3.30		1.11

Coming, as they do, from all corners of Southern Africa, the Mine Native labourers must bring with them a considerable amount of enteric infection from the rural areas—a danger to the town which is increased by the frequency with which these men come and go (few staying longer than 12 months at a time). The Mine Natives mirror the enteric position in the rural population and so long as the incidence of "carriers" in the country districts remains high, so long will there be many unrecognised "carriers" entering upon employment on the mines. The Town suffers because these men come out into the Location and the Township at the week-ends and associate with the urban dwellers. It is of real importance, therefore, that the incidence of enteric fever on the mines should be reduced as rapidly as possible, and the prophylactic measures at Van Ryn Deep suggest one efficient method of prevention if strict attention to sanitation, especially underground, is maintained at the same time.

The procedure adopted by this Department in dealing with enteric cases, occurring outside the Mine Compounds, is now standardised as follows:—

i. Immediate hospitalisation of the patient, or of any person suspected of suffering with enteric fever;

ii. A full history taken, and recorded, of the patient and his surroundings in an attempt to trace the source of infection and to identify all contacts.

iii. All suspected "carriers" sent to hospital for examination, and proved carriers removed from food handling and given treatment where possible.

iv. All contacts of suspected and proved cases at once receive oral (Besredka) vaccine under supervison.

v. Education of the members of the infected household in the significance of enteric fever and its spread.

As regards cases occurring in the Township, Location, and semi-rural areas during 1936-1937, the source of infection was almost invariably found to be a "carrier" or a previously undiagonised case. No water-borne or milk-borne infections were discovered. In this connection it may be noted that all dairy workers are examined to exclude enteric "carriers."

Of the 80 cases of enteric notified during the year, 12 were cases "imported" from outside Benoni—of these imported cases 5 were outside the mines and 7 were Mine employees. Therefore the total of cases actually infected in Benoni during 1936-1937 was 68.

For comparative purposes the totals of accepted cases in previous years may be noted:—

	EUROPEAN	NON-EUROPEAN		ALL
		OUTSIDE MINES	MINES	RACES
1931-32	25	43	92	160
1932-33	16	47	87	150
1933-34	29	103	182	314
1934-35	10	36	63	109
1935-36	51	54	119	224
1936-37	17	16	47	80

From the information gained during the first year of our newly-organised attack upon enteric fever it would appear that the success of our future efforts will be dependent upon the efficiency with which the following measures are carried out, although not all are within our immediate control:—

i. The realisation by Benoni residents that enteric fever can only be contracted by swallowing the Bacillus Typhosus, and that this germ lives in dirt.

ii. The provision of water carriage sanitation in all areas of the Municipality, including the Mines, the removal of insanitary housing, and the provision of an adequate domestic water supply for every house.

iii. The immediate notification to the Health Department of all suspicious cases, their isolation, and immunisation of all contacts.

iv. The discovery of all "carriers" and their removal from food-handling.

v. The prophylactic immunisation of large transient populations from infected areas, such as are found among the incoming mine employees.

2.—ENTERITIS (Page 74)

Acute diarrhœa and enteritis, occurring especially in infants, is still one of the major causes of sickness and of death among the non-European population. Due to infective organisms harbouring in dirt, enteritis will remain the most serious blot on the public health picture in Benoni until two problems have been solved among our non-European population. The first is the provision of sanitary housing which includes adequate kitchen and pantry facilities as well as a sufficient and easily available supply of water for domestic purposes. The second is the education of the people in the old rule that cleanliness is next to godliness, which many of the Bantu have forgotten since they left their rural kraals to dwell in city slums.

Enteritis is not a notifiable disease, but the fact that 4 European children and 111 non-Europeans died during the year from this preventable sickness is sufficient to prove that in this disease of dirt we have a serious public health problem.

Further enquiries have been instituted during the year to ascertain more exactly the factors which lead to so high an incidence of enteritis.

In comparison with the period 1931-1936, the current year has shewn a marked improvement in the position. Among children under the age of 2 dying from enteritis, the death rates during 1931-1936 were:—

Europeans, 0.51; Location Natives, 9.57; Coloureds, 4.36; Indians, 4.84.

During the current year these rates have been reduced to:—

Europeans, 0.19; Location Natives, 4.95; Coloureds, 2.67; Indians, 4.17.

The high death rate among Indians is closely related to the insanitary conditions in the Asiatic Bazaar (see page 56).

3.—DYSENTERY

This infectious condition, not notifiable, should be non-existent under the climatic conditions existing at the high altitude of the Reef. But it is encouraged and harboured wherever dirt is associated with foodstuffs, and especially where, under the particular conditions obtaining in South Africa, fresh vegetables are frequently tended by those who have little idea of cleanliness.

Dysentery was responsible for no deaths among Europeans in 1936-1937, and for a death rate of only 0.08 among all races as compared with that of 0.26 in 1931-1936. It may well be that some part of this improvement is due to the intensive measures taken during the year to safeguard the town's fresh food supply against dirt, and the germs and parasites which live in dirt.

VI.—TUBERCULOSIS.

(Page 70)

On the Reef for many years tuberculosis has been considered a rare disease except for the condition which is commonly known as "Miners' Phthisis"—a form of Silicosis in gold miners which is sometimes associated with actual tubercular infection. As the result of the measures adopted by the gold mining industry, "Miners' Phthisis" is becoming less and less frequent. But pulmonary tuberculosis, among the non-mining Native population living in the urban Locations, is becoming at the same time more and more apparent. The lung tuberculosis death rates for Location Natives in Benoni over the past few years are as follows (deaths per 1,000 population):—

1931-32 ...	0.90	1932-33 ...	1.81	1933-34 ...	2.00
1934-35 ...	2.56	1935-36 ...	2.32	1936-37 ...	2.58

Over the 1931-1936 period the similar rates for other racial groups were Europeans, 0.26; Coloured, 2.07; Indian, 0.63; Mine Natives, 0.38. In 1936-37 the European death rate had been reduced to 0.14, while the Mine Native rate remained at 0.38.

In Benoni the incidence of lung tuberculosis among Mine Natives need not be considered at the moment; all such sufferers with tuberculosis are repatriated to their kraals outside Benoni—if the disease is not of so rapidly a fulminating type that they die before they can be repatriated. As far as the population of Benoni is concerned, it is fairly certain that tuberculotic Mine Natives in an infective state will very rarely be in a position to infect persons outside the mines.

It is also fairly clear that lung tuberculosis among Europeans is comparative ly rare—at least in the stage in which a diagnosis is made, or in which the condition leads to death. Of those cases which do occur, nearly all of them are found in males who are also suffering with silicosis; lung tuberculosis in European females—according to the notification and death returns—is relatively rare.

But among those who live in over-crowded and insanitary dwellings, and especially among those in whom poverty has led to under-nutrition, lung tuberculosis is far from rare. In his "Health Services" report to the Council during the year the Medical Officer of Health had occasion to advise that "pulmonary tuberculosis is a result of (1) over-crowding; (2) poverty, resulting in inadequate feeding and other factors which lead to a weakness of the body—thus render- it more likely to suffer a flaring up of the infection in the body, with the development of the clinical signs of tuberculosis; (3) ignorance regarding the significance of, and the methods of spread of, the disease, and ignorance regarding the steps that can be taken by every individual to prevent the spread."

Those conditions obtain, in Benoni, in our non-European population living in the Locations and elsewhere away from the Mines. It is not surprising, therefore, that ample evidence is now available in this report that lung tuberculosis is rapidly increasing among these people, is likely to increase until the root causes are removed, and is likely to spread to the European population unless the advance of the disease is checked.

We have, far too long, considered tuberculosis a disease of the lower altitudes. It prospers wherever overcrowding and poverty occur. This fact must be realised. These conditions obtain in our Native Locations.

How can this situation be relieved? By (1) the education of all persons regarding the significance of tuberculosis and the way in which it spreads—mainly through spray infection from person to person in over-crowded dwellings. (2) The discovery of every case at the earliest possible moment, i.e., before it has become infectious; (3) the isolation of all infectious cases and their treatment to render them non-infectious; (4) the improvement of the environment, especially toward the removal of over-crowding and of insanitary dwellings; and (5) the improvement of the social and economic conditions of the poorer classes.

When we recollect that this work is to be done among the Location Native population, and when we re-consider these five items in terms of non-Europeans, the solution of this problem may seem to most South Africans to be exceedingly difficult. But the writing on the wall gives us reason to believe that, unless we realise the necessity for these measures, lung tuberculosis will increase even more rapidly among our Native Location populations and two things will happen:—The Native population upon whom we depend for labour, will become increasingly inefficient, and the risk of spread of tubercular infection to the European population will also be increased.

During the current year little more than survey and preliminary action has been taken. All infectious cases have been removed to hospital, and a gradual improvement of the environment within the existing insanitary Location has been achieved. Plans have been laid for the early discovery of cases through a combined clinic and follow up of contacts scheme, but this awaits the appointment of an Assistant Medical Officer of Health and the training of non-European Health Assistants. No attempt has been made by this Department to improve the economic conditions of the Location residents, and against the brick wall of poverty the Department only beats its head.

One apparent advance has been made—in the notification of cases of the disease. Whereas in 1931-36 twice as many cases of Native Tuberculosis died in the Locations compared with the number of cases notified, in 1936-37 the figures were about equal. In brief, we are beginning to discover Native tuberculosis before the patient dies. There is a long row to hoe before we conquer the tubercle bacillus in the non-European population; but at least the evidence and the experience accumulated during the current year has shown the lines along which our attack must be launched.

VII.—VENEREAL DISEASES.

(Page 80)

The work done during the year has revealed inadequate evidence regarding the incidence of the venereal diseases among the population of Benoni. Syphilis, as a cause of death, was recorded in 8 Native and 1 Coloured cases—Gonorrhœa caused no deaths. 8 Europeans suffering with syphilis and 10 with gonorrhœa were sent to Rietfontein Hospital for treatment; while 125 non-Europeans suffering with syphilis, and 32 with gonorrhœa were sent to the same hospital. At the Location clinic, 19 male and 274 female adult non-Europeans attended for treatment, together with 223 non-European children.

From these returns it would appear that venereal disease is comparatively uncommon among Europeans, and is far more common among non-European women and children than among non-European males.

These records cannot in any way be accepted as a picture of the relative incidence of venereal disease among any section of the population. They merely show that something was done during the year to treat a certain number of the cases in existence. Not until a full service of education, clinics, and follow-up facilities is put into action shall we be aware of the extent to which venereal disease is causing ill-health in the population of Benoni. With the appointment of an Assistant Medical Officer of Health to attend at these clinics, and after non-European health assistants have been trained, we shall be able to discover the extent of this item on the debit side of the public health account, and to balance our statement.

VIII.—VERMIN CONTROL.

1.—**RODENTS** (Page 85)

The prevention of breeding and the destruction of rodents, both in the veldt and on occupied properties, is actively prosecuted by the Department in its measures to reduce the risk of any outbreak of plague. The previous activities along the Municipal boundaries which were aimed mainly at the production of a rodent-free belt around the town have, during the current year, been reduced to allow of more intensive work in the thickly populated areas where a continual effort has been made to keep the rat on the run and to build him out of existence. From figures detailed on page will be seen the very large number of rodents destroyed during the year, and this does not include the many which were destroyed by householders acting upon the advices given by the Department's staff. Nor does the tally of rats killed tell the most significant story of the work done, for that lies in the many food shops, grain stores, trade and private premises which have been rendered rat-proof during 1936-1937 to the specifications required by the Department. An additional gain of ground in the war against the rat has been made through the routine scrutiny of all building and drainage plans by the Health Department before erection starts; it has been possible to ensure that all new premises are built with the necessary rat-proofing included.

In September the Department had the advantage of the assistance of Dr. L. Fourie, Assistant Health Officer for the Union, who carried out a preliminary survey of the rodent position in Benoni. In his report he stressed the necessity for attack upon the domestic rat rather than the veldt rodent, the need for a systematic survey of rat-infested premises and the enforcement of rat-proofing, the regular gassing of such insanitary areas as the Asiatic Bazaar until new houses were erected, and a tightening up of scavenging and of refuse tip control.

2.—FLIES

The Township of Benoni, as a result in part of the deplorable exposure of household refuse in open brick middens in the backyard of almost every house, has been fly-ridden in the past. By October, in spite of the fact that we had already cleared the town of a considerable number of these brick bins, flies had once again become most deplorably frequent, especially in the vicinity of the several stables which have been allowed to spring up in the heart of residential areas. The public of Benoni, generally speaking, gave no sign that it was in the least worried by this plague of flies which, as more than one resident casually remarked, was no worse than usual at this time of the year. There was apparent, indeed, a surprising carelessness—even in tea-rooms and food shops—regarding the presence of the fly. It became obvious very soon that an intensive campaign to make Benoni fly-conscious had to be carried on concurrently with active sanitary measures.

This campaign was instituted in October. A full explanatory pamphlet was sent personally to every householder, posters urging the public to " Kill that Fly " were broadcast, banners stressing the same point were erected in the Locations, talks were given to school children illustrated by demonstrations and supported by a rhyme card for the juniors—" The Fly and the House that Jack Built." Every effort was made to tell the public that "the only good fly is the dead fly." Especial daily attention was given to all stables and places where manure was stored, and to all refuse removal and disposal services.

The result was most gratifying. There remains much to be done in preventing facilities for fly-breeding, but it may definitely be claimed that the fly incidence in Benoni was very greatly reduced by the time that summer had set in.

3.—MOSQUITOES

Neither of the mosquito vectors—Anopheles funestus or Anopheles costalis (vel gambiæ)—was found in the Municipal area during the year, but owing to the very extensive breeding of culicine mosquitoes in the many patches of standing water, as well as most freely in casual stagnant water in old receptacles in private backyards, it was considered advisable to employ one Native to spray with anti-larval oil all potential breeding places once a week during the mosquito season. The result was a marked decrease in the number of adult mosquitoes in the township area.

4.—BUGS AND OTHER VERMIN

Cyanide fumigations in Benoni are done by private licensed fumigators who use the old-fashioned method of producing cyanide gas through the interaction in the infested room of sulphuric acid and the cyanide salt. As a result no exact computation can be made of the amount of gas produced and consequently the fumigation process is not always successful in killing all bugs and their eggs. Therefore refumigations are frequently necessary — a most unsatisfactory state of affairs.

In order to bring to the notice of fumigators the modern method of using a preparation like Zyklon, through which it is possible to produce the exact amount of gas required to kill eggs as well as bugs, the Department arranged for the South African Fumigation Company to give a series of demonstrations in Benoni during March. To these demonstrations came Inspectors and Fumigators from the surrounding towns as well as from Benoni. Unfortunately the cost of this modern and efficient method is higher than that for the old-fashioned method—so that local fumigators did not appear to be very interested.

The Zyklon method was put into use at the Municipal Compound for the regular disinfestation of the personal effects of the Native employees resident there, and proved most successful.

During 1936-1937 there were 9 private fumigators working in the area, of whom 7 were licensed. 740 dwellings were fumigated by them during the year to destroy bugs.

Various complaints regarding ants, cockroaches, and moles were dealt with by the Department.

IX.—FOODSTUFFS.

The past unfavourable record of Benoni in respect of acute bowel infections resulting from contamination, by the germs which prosper in dirt, of food and drink has necessitated an immediate overhaul of the food supplies of the people of Benoni as one of the first essential activities of the Department in improving the environment of the people. A rapid survey of the position at once revealed the fact that only the meat supply of the town was adequately protected. Food shops, food stores, the kitchens and pantries of those places where the public food supply was prepared for consumption—these, generally, were found to be well below the standards of cleanliness which must be expected by a modern community. The prevalence of flies in the warmer months, the absence of a water carriage sewerage system, and a general carelessness about the handling of foodstuffs—these were among the main factors which, in the past, had allowed Benoni food supplies so frequently to be contaminated, if we are to accept the enteric fever incidence rates and the enteritis and dysentery death rates as our criteria of sanitary food handling.

It became necessary first to draw attention to these facts, to arouse the interest not only of the general public but also of the actual food handlers of Benoni. Hence a good deal of propaganda had first to be released. As is usual when public attention is drawn to defects in the communal life, not a few cries were raised that the Department was doing harm to the good name of Benoni by drawing such persistent and public attention to the presence of uncleanliness in our midst. But, with the gradual appreciation of the true facts, which developed after the intensive fly campaign and the constant attention given to certain food shops in the town, there arose a marked change of public opnion. Towards the end of the year the Departmemnt was receiving an increasing amount of co-operation from the public in the form of complaints and advices when individual citizens observed insanitary conditions in connection with the storage, preparation and sale of foodstuffs.

In connection with the work done during the year attention should be drawn, with especial emphasis, to the success which the Foods and Dairies Inspector has achieved through his continual individual contact with the food handlers of the town. He has entered into the new approach to these problems with a keenness and an imagination which has, alone, made the gradual but definite advance possible; the friendly spirit which he has maintained with all food workers has made possible that individual education in sanitary food handling which forms the basis of our campaign against dirt in foodstuffs.

1.—ABATTOIR AND MEAT SUPPLY (Page 82)

Benoni is fortunate in that an excellent Abattoir was erected in 1935. It compares most favourably with any other Abattoir in the world and is, in size and amount of work done, the fourth largest in the Union of South Africa.

The Abattoir Superintendent provides the following interesting information about this project of which Benoni has good reason to be proud.

"In October, 1913, Benoni opened its first Abattoir which served the needs of the East Rand. With the erection of this Abattoir production of meat was carried out under better conditions than obtained previously, but until January, 1935, no definite laws controlling inspection were laid down by Local Authorities or by Government. At that time regulations framed under the Public Health Act (No. 36 of 1919) were formulated and a definite system of inspection was laid down.

The expansion of the East Rand after 1922 taxed the available space at the existing abattoirs to their limit; new Abattoirs were necessary and were finally completed in July, 1935. It is indeed true to say that although Benoni's first establishment was called an Abattoir, in the absence of cold storage facilities and hygienic methods of dealing with waste and condemned meats, it was really no more than an efficient slaughter pole.

In 1913 the number of carcases inspected each week was 25 oxen and 100 sheep; in 1922, 50 oxen and 125 sheep daily; in 1936-1937, 130 oxen and 250 sheep daily.

The new Abattoir includes the following details:—

LAIRAGE.—Approached easily by rail or road, and each pen provided with watering facilities, etc., so that cattle may be accommodated for at least 3 days. From the pens a runway is provided leading direct to the stunning pens, which are of "Jameson" type—of especial efficiency for Indian and Kosher killing. For ordinary killing the ox is driven in, the gate closed, the animal shot and immediately tipped. As regards Kosher killing the ease of operation is demonstrated by the following times taken in Benoni:—An ox was driven into the pen, fastened for Kosher killing, tipped, cut, bled, thrown out, and pulled into the hall in 4 minutes, while a floor of 14 oxen were driven in, shot, tipped, pulled in and bled in 22 minutes. The pens are roofed to prevent over-heating of the cattle.

SLAUGHTER HALL. — Divided into 5 bays, each complete with 4 windows, 2 sets of overhead rails and blood channels. Each bay is 27 feet wide. After dressing and inspection of the carcases they are run direct to the pre-cooling hall where they are either dealt with by the butchers immediately or are left to pre-cool before removal to cold storage. An offal cleansing house is provided. All pigs are dealt with in a separate dressing hall next to the main slaughter hall; it is equipped with scalding and washing tanks, tables and hooks for hanging.

PRE-COOLING HALL. — With ample hanging space for all carcases and equipped, like the slaughter hall, piggery and cold storage, with " Locwil " patent twin bar overhead gear.

COLD STORAGE. — Chambers for the chilling and the freezing of carcases, chilling of small goods and the quick freezing of offal, plucks, etc., are provided. The principle of refrigeration adopted both for chilling and freezing is the air circulating system. Ducts are led into the chambers immediately under the ceilings on one side of the room and through vents in these ducts pre-cooled air is introduced downwards, circulates through the chamber, and is extracted through a similar duct on the opposite side of the chamber, taking with it the warmth extracted from the meat. This air is drawn over brine-sprayed ammonia coils in a separate chamber and the cooled air is then reintroduced into the duct leading to the chilling or freezing room.

The advantage of this system over that of direct expansion is seen in the freezing room, where meat stored at 14°F. (—10°C) does not become frosted up on the outside but retains " bloom " and dryness, and when taken from the freezer cannot, except for its hardness as the result of being frozen solid, be distinguished from " chilled " meat. Another advantage is that de-frosting is not necessary, therefore the chambers do not become wet, nor is there any likelihood of the formation of " mould." The compressors are of 30 ton refrigeration capacity. The plant is the largest automatic plant for meat refrigeration in the Union.

BY-PRODUCTS.—All blood and wastes are treated to produce blood meal, mixed (meat), meal, and fat. Two steam jacketted driers are in use. No steam or water comes into contact with the material being processed, and all moisture is extracted by the heat produced in the jackets. Running through each drier is a shaft carrying beater arms which continually stir up the mass, prevent burning and hasten drying. After 5-6 hours for blood, 2½ hours for meal, etc., all moisture is extracted. The blood powder thus obtained is cooled off, ground, and bagged for sale. The meat, offal, etc., is taken from the drier and placed in a turbine fat extractor after which it is ground and is ready for sale. The fat produced is clarified by a soda solution and sold to soap factories. This year 70 tons of blood meal, 75 tons of meat meal, and 16 tons of fat have been produced and sold.

GENERAL.—All floors for cattle pens are of Pretoria granite concrete with a rippled surface. The floors of other buildings are the same but with a smooth surface. Walls are of faced buff brick finished off internally with glazed bricks to 7 feet 6 ins. high and smooth cement plaster above. All cement plastering to walls and ceilings is finished with permoglaze enamel. All roads are of asphalt carpet, drained and graded."

All meat for sale in Benoni must be slaughtered at these Abattoirs or, if slaughtered at other approved Abattoirs, must be brought in for inspection and stamping. There are no private slaughter poles in Benoni. All slaughtering is done by slaughtermen employed by the butchers.

The wholesale value of the meat passed through the Abattoir during the current year has totalled £330,000, including Oxen, £210,000; Sheep, £50,000; Pigs, £1,500; Imported Meat, £17,500; Hides and Skins, £36,000; and Offal, £15,000.

The Foods Inspector in the town supervises the condition of meat and its handling in the shops, in close cooperation with the Abattoir Superintendent. Improvements in butcher shops achieved during the year have included the provision of wash basins with running water inside each shop, and adequate storage for overalls and other clothing.

2.—DAIRIES AND MILK SUPPLY

Control over the Town's milk supply, in the absence of a Municipal Milk Pool on the lines of the Meat Abattoir, is far less complete and far less satisfactory than is the control over the meat supply described above. The difficulty of control is enhanced by the fact that milk provides almost the most suitable of all food media for the growth of bacteria.

With constant attention to premises, milk handlers, utensils, and methods of delivery the Inspector is gradually bringing some order into the chaotic conditions which were apparent at the beginning of the year under review—when hardly any dairyman had a cooling plant, few had plants for the sterilisation of utensils, and hardly a cowshed had water laid on inside so that the floors could be sluiced down regularly.

Detailed comment on conditions will not be attempted in this report. New buildings, new equipment, new methods have all been called for during the year and slowly we are reaching the point where the greater bulk of the town's supply of milk may be considered clean and safe. Several of the producers have already reached a fairly high standard of cleanliness. Next year it should be possible to give a full report of a reasonably satisfactory nature. The task of controlling the town's milk is not made easier by the number of small dairies in existence. In

1936-1937 were registered no less than 17 milk shops, 22 retail dairy producers (6 of whom were outside the Municipal area), and 21 wholesale dairy producers (most of whom were outside the Municipal area).

The few bacteriological examinations of milk samples taken during the year (see page 84) serve to prove how much still needs to be done in improving conditions of milk handling on some of the dairy premises. Chemical analysis for milk fat were generally satisfactory (page 84.) All dairy workers were subjected to the Widal test and in 2 cases enteric " carriers " were discovered and removed from the milk trade.

3.—FOOD SHOPS AND RESTAURANTS

Among the many points to which especial attention was paid were the following:—

i. The personal cleanliness of food handlers. To encourage cleanliness we have required a wash basin with running water, towel, nail brush and soap in each food shop and kitchen. Where the workers are living on the premises proper ablution facilities to be provided. Education of the food-handlers to use these facilities.

ii. Cleanliness and adequacy of sanitary accommodation.

iii. Removal of all fly-attractive material, destruction of flies, and provision of fly screening plus really efficient ventilation.

iv. Tiled or enamelled walls in kitchens and pantries. Removal of all junk which might prevent daily cleansing.

v. Provision of adequate washing-up tables and sinks, and of the use of a solution of soap or soda or suitable cleansing powder in hot water when cleansing all utensils, followed by a thorough rinsing or spraying or immersion in clean boiling water for 1 minute, or in hot water at not less than 180°F. for 2 minutes. Clean towels for drying.

vi. Storage room for vegetables with removable wire shelves. Refrigerators for all other perishable foodstuffs.

vii. Absolute freedom from vermin of all sorts; burning of all possible refuse and depositing of the rest in approved and covered bins.

A very marked improvement was found throughout these premises towards the end of the year.

4.—KAFFIR EATING-HOUSES

It has been a frequent complaint during the year that Mine Natives, coming out from their compounds and purchasing foodstuffs in the various kaffir eating-houses, have become infected by the germs of bowel diseases in contaminated foods. Whether this is correct or not, there is no question that sanitary conditions in some of these eating-houses set aside for Natives were most unsatisfactory.

The licensees have proved most willing to put their premises in order along the lines indicated by this Department which, generally, have been as follows:—

i. Kitchens—to be modernised, made dust-proof as far as possible, provided with wash-up sinks and running water in each kitchen and all waste water to be innocuously removed. Cooking utensils to be of approved types. All cooks and other employees to wear clean overalls.

ii. Butcher shops in connection with Eating-Houses—to be improved so that all meat hung or exposed for sale is adequately protected against contamination by dust, flies, and excessive handling by Natives. A separate room provided for storage of offal. The removal of the butcher shop from the eating house room proper.

iii. Eating-House—Tables, floors, walls, etc., to be clean.

iv. Native Quarters—to be made to comply with the By-Laws, and ablution facilities provided for employees. Yards to be made impervious as far as possible and suitable methods of refuse removal provided.

5.—FOODSTUFFS CONDEMNED AND SAMPLES FOR ANALYSIS

These are detailed on pages 83 and 84.

X.—MATERNITY AND CHILD WELFARE.

Reference has already been made (page 14) to the European infantile mortality rate of 54.67 and the high rate among non-Europeans, and to the comparatively high maternal mortality rates for all races.

When we examine the more detailed infantile death figures on pages 68 and 69 it becomes abundantly clear that many deaths have occurred which may truly be classed as preventable. The death returns also mirror the the sickness incidence. When we find that 30% of all infantile deaths are due to bowel infections caused by germs existing in dirt, and that 29% are due to bronchitis and pneumonia—in which a fatal result is often associated with poor nutrition of the infant, carelessness or ignorance on the parts of the parent, and an insanitary environment—then we have grounds for the realisation that much remains to be done in Benoni not only to improve the environment into which our children are being born, but also to give the parents that advice and assistance which obviously is wanting at present.

Such education must be provided through the medium of home visiting by expert health visitors and of easily available instruction at ante-natal and infant clinics.

Reference to page 80 will show that although the one Municipal Health Visitor has done a very great deal—and the results of her work are already apparent in the falling European infantile mortality rate — the absence of any ante-natal clinics, or of any infant clinics for non-Europeans, has rendered any extensive attack upon the problem of infant sickness impossible. The one Native Nurse has had much of her time occupied with maternity work—a duty which is not a responsibility of the Municipality, but of the Province, though in the absence of any district maternity service provided by the Local Hospital Board the Department has undertaken this work pending the provision of a district midwifery service.

No further comment will be made this year upon the local position regarding maternal and child welfare save the statement that the Council has now agreed to the appointment of an Assistant Medical Officer of Health to attend at the essential clinics, that a full scheme of clinic services has been planned, that an additional European Health Visitor is to be appointed, and that there is every opportunity of the Local Hospital Board providing a full District Midwifery Service.

Close co-operation has been maintained throughout the year with the very active voluntary Children's Aid and Benevolent Society, and with the Race Welfare Society which runs the local conception control clinic.

The total number of midwives registered for practice in Benoni is 38, of whom 31 are certificated (including 2 Natives) and 7 non-certificated. The Health Visitor has reguarly inspected the bags of these midwives and kept in constant touch with them.

XI.—NUTRITION AND POVERTY.

The effect of poverty upon the nutrition and the health of the people has received much consideration during the year. In the presence of so great an activity towards the re-organisation of the Department and the immediate improvement of the environment of the people, it has not been possible to do more than to lay down the groundwork for a social and nutrition survey, and a plan of campaign to educate the public in the steps to be taken to remedy unsatisfactory nutrition. This work, among Europeans and among non-Europeans, is now planned and will form the major activity of the Department during the coming year.

XII.—HOTELS AND BOARDING HOUSES.

In consultation with the Liquor Licensing Board it has been possible to draw to the attention of hotel-keepers and of those in authority the many defects in existence in Benoni hotels. The response on the part of licensees has been most gratifying and many improvements are in course of completion. The improvements called for by this Department have included the re-fitting of kitchens, pantries, and sculleries, the methods of cleansing of utensils used in the daily supply of food to hotel residents, the ventilation and natural lighting of bedrooms, the proper supply of baths, and the accommodation and ablution facilities for non-European employees. It is a pleasure to be able to report all the licensees are complying with the requirements of this Department.

As regards Boarding Houses, which do not come under the control of the Liquor Licensing Board, each one has been called upon to re-fit his premises in such condition that the health of the boarders will be safeguarded. Progress in this respect has been slower than has been the case with the hotels, but a gradual improvement has been noted.

XIII.—WATER SUPPLY.

The water supply for all dwellings in the area with the exception of certain mining properties and most premises in the semi-rural areas -- which are supplied from their own boreholes or wells—comes from the waterworks of the Rand Water Board. This water is excellent, being continually supplied in a fresh and pure state. The Department has no control over the purification nor over the storage of the water before it comes into the pipes in Benoni.

The many wells in the semi-rural areas may or may not be providing pure water. A survey of these wells and analysis of the water from them must be undertaken in the near future.

XIV.—NIGHT SOIL, WATER, REFUSE REMOVAL AND DISPOSAL.

The services provided under this heading were transferred to a special sub-department, under the control of Mr. W. H. Martin, as Sanitary Manager, on the 1st of May, 1937. Under this section is also included the Municipal Compound and all street cleansing services.

XV.—ROUTINE SANITARY WORK

From pages 81 to 85 of this Report will be obtained some idea of the many services rendered during the year by the Health Inspectors while carrying out their routine and never-ending duties. With the re-organisation of the staff it was possible to allot a definite area of Benoni to each official and he became responsible to the Medical Officer of Health for all activities in his special district. It was not possible to carry out many purely routine house-to-house visits as the Inspectors found themselves fully occupied with the renewed attack upon insanitary outhouses, servants' quarters, and dwellings, with the careful scrutiny of all plans for new buildings, the disposal of wastes, the inspection of premises to be licensed, etc., etc.

Though, in this year's report, it is not intended to describe in any detail the routine work done by the Inspectors it can be understood that their work has almost doubled during the year under the new dispensation.

The number of prosecutions (page 85) was reduced to a minimum, and on every possible occasion the owner or tenant of any property where nuisances occurred was seen in person or a personal letter sent to him. In this way—although it entailed a considerable additional labour to the Inspectors—a great measure of pleasant co-operation has been achieved between the Department and owners of property in the town, to the very real benefit of the general public. Every complaint received in the Department is at once recorded on a special form, and the docket is not finally filed until the offending matter has been cleared up.

Under a new system of filing in the office a separate jacket is now kept for every stand in the Municipal area, and in this jacket are placed all records and correspondence regarding that stand. As a result we are gradually building up a complete sanitary history for every property in Benoni—a procedure which is already promoting efficiency in working.

XVI.—GENERAL HOSPITAL AND OUT-PATIENTS SERVICES.

A responsibility is laid upon the Municipality, by Law, to provide facilities for the isolation in hospital of residents suffering with infectious disease where such isolation is necessary to safeguard the public health. Upon the Municipality also is placed the duty of providing the necessary out-patient facilities for creating and improving health among the people and for treating infectious disease — in ante-natal and infant welfare clinics, and in venereal disease and tuberculosis clinics.

But it is not the duty of the Municipality to provide general hospitals nor to provide treatment for the indigent sick except as regards infectious disease cases. This duty is laid upon the Provincial authority, represented in this area by the Benoni-Boksburg Hospital Board.

It was apparent, therefore, that much of the public demand for a hospital in Benoni—to which demand very persistent expression was given during the year by certain residents—was based upon a lack of knowledge of these facts, in so far as the petitioners called upon the Municipality to provide such a hospital.

In order to clarify the position, a survey of existing facilities was made. It was found that for the 21,000 Europeans there are available 132 beds (jointly with Boksburg) in the Benoni-Boksburg Hospital, 32 beds in the New Kleinfontein Hospital, 29 beds at the Athlone Nursing Home, and 6 beds in other Nursing Homes (including maternity beds). There is also in erection a new Nursing Home to accommodate 15 Europeans. As regards non-paying patients, these must go to the Benoni-Boksburg Hospital, 5 miles away.

For 38,000 Mine Natives there are 603 beds in Mine Hospitals. For 20,000 non-Europeans, almost all of whom are non-paying, the available beds in the Benoni-Boksburg Hospital are 88 for Native and Coloured, and 20 for Indians; these must cater also for non-Europeans from Boksburg and from the surrounding areas.

Briefly the position is that, as regards number of beds, the European population is adequately provided, as also is the Mine Native population. As regards the rest of the non-European population, the supply of beds is most inadequate.

Out-patient services for indigent residents are as follows:—

1. For Europeans. A daily visit by a doctor, nurse, and dispenser from the Benoni-Boksburg Hospital to the Children's Aid Building in Rothsay Street, where indigent Europeans receive out-patient treatment free of charge. An average of 100 persons a month receive such treatment.
2. For non-Europeans. (a) Mine Natives — provided at the Mine Hospitals. (b) Other Non-Europeans: (i.), East Rand Mission Clinic at the Benoni Location, where out-patient treatment has been given for some years and a small fee charged. (ii.) On the 1st of February the Benoni-Boksburg Hospital Board opened a daily out-patient department at the Location Clinic Building. A doctor, dispenser, and 2 nurses attend each morning and all treatment is given free of charge. This out-patient department is held in the building erected by the Council, opposite to the Location Offices, where the Municipal clinics for non-Europeans are also held. In the 5 months since the opening 4,049 persons have made 5,026 attendances — an average of 1,005 attendances each month. This service has been of the greatest possible value to the Location residents, few of whom can afford to pay for medical attention. The Council may well feel pleased that this essential work is being done by the Hospital Board as the result of its representations to that Board.

Representations were also made regarding a casualty clearing block and a maternity block, and regarding additional hospital accommodation for non-Europeans. These have still to be provided, and the question of a district general nursing service has still to be considered.

But the position at the end of the year had so far improved that treatment was available for every indigent sufferer free of charge.

The 3 Nursing Homes in Benoni were regularly inspected by the Health Visitor, and the necessary reports made to the Secretary for Public Health. These inspections, which are so useful a function of a Municipal Health Department, do not include such hospitals as the New Kleinfontein Hospital which is under the supervisory control of the Union Health Department. It is considered that this anomalous state of affairs should be removed.

XVII.—OTHER SERVICES.

During the year the Medical Officer of Health examined 90 European persons on their engagement as temporary employees in the service ofthe Municipality.

The Medical Officer of Health examined 519 Natives at the Municipal Compound prior to their employment by the Municipality.

In March the Medical Officer of Health drew the attention of the Committee to certain variations observed in Native wages among those employed in the various Departments; as a result, the Council was able to consider this matter and to lay down definitely scales of Native pay throughout the Service.

XVIII.—STAFF.

For many years Dr. R. P. McNeil, as part-time Medical Officer of Health, has been at the head of the Department and has guided its many activities toward the gradual development of an efficient health organisation. Dr. McNeil brought to the service of the Council not only his wide experience of medical practice but also his especially valuable and intimate personal knowledge of the town during its years of early growth. The seriousness with which he approached the public health problems of this town, and the foundations which he laid of a sound Health Department, have combined to make the task of the in-coming Medical Officer of Health far easier than it would otherwise have been. In August 1936, at a dinner held in Johannesburg, His Worship the Mayor gave expression to the appreciation which the Council felt for the devoted services to the Town which the retiring Medical Officer of Health had rendered.

On the 13th of July, Dr. C. C. P. Anning, lately Medical Officer of Health of the City of Pitermaritzburg, took over the duties of the first full-time Medical Officer of Health for Benoni. As the result of his re-organisation of the Department, the Council found it necessary to appoint an additional Health Inspector, a learner Health Inspector, and a Typist.

On the 1st of May, Mr. W. H. Martin, who for many years had borne the heat and burden of the Department's day as Chief Health Inspector, was appointed Sanitary Manager in charge of all refuse and night soil services, street cleansing, public conveniences, and the Municipal compound. In this new office Mr. Martin became directly responsible to the Committee for the services of this new Sanitary Department. No new Chief Health Inspector was appointed.

The work of the Health Inspectors was allotted as follows:—

4 District Inspectors—(1) Westdene and Township West; (2) Township East; (3) Northmead and outside areas, including Mines, Agricultural Holdings, etc.; (4) Location, Asiatic Bazaar and Coloured Section. 1 Food and Dairies Inspector. 1 Infectious Diseases and Vermin Inspector.

With 3 Learner Health Inspectors it became possible for each to spend 6 months, in rotation, in District work, Office work, and Abattoir work.

The Inspectoral Staff is small in comparison with other towns, and it is likely that an increase on the Dairies side will be necessary. The Health Visiting Staff includes only one European Health Visitor; this will be insufficient when the full clinic services essential for a town of the size of Benoni are provided.

It became necessary to recommend that a full-time Assistant Medical Officer of Health be appointed in order that the necessary ante-natal, infant welfare, venereal disease and tuberculosis clinics for all races could be started, and the Medical examinations of Natives taken over by this Deparment. The Council agreed to this appointment, but had not selected the official when the health year ended on the 30th June.

STAFF

Medical Officer of Health.—Dr. C. C. P. Anning, M.A., M.R.C.S., D.P.H.

V.D. Clinic Medical Officer (Part-time). — Dr. E. M. Higgs, M.D., D.P.H.

Chief Health Inspector. — Mr. W. H. Martin (until 30th April, 1937).

Health Inspectors. — Outside Areas, Mr. S. L. Chapman; Foods and Dairies, Mr. B. N. Booysen; District (West), Mr. T. R. A. Alison; District (East), Mr. H. E. Linton; District (Locations), Mr. P. J. Howett; Infectious Disease and Vermin, Mr. N. Youens (from 10th May, 1937).

Learner Health Inspectors. — Mr. W. B. Tite, Mr. C. S. Pittendrigh, Mr. N. B. H. Veldsman (from September, 1936).

Rat Catcher.—Mr. L. Cantor (until 7th April, 1937); Mr. P. T. Engelbrecht (from 2nd June, 1937).

Lady Health Visitor.—Miss K. A. Forsyth.

Clerical Staff. — Clerk, Miss K. N. Maddock; Typiste; Miss D. F. Ferguson (from September, 1936).

Location Native Nurse.—Miss W. E. Majola.

Abattoir Superintendent.—Mr H. J. Davey.

Meat Inspector (Temporary).—Mr. A. R. Jolly (from 8th May, 1937).

Assistant Meat Inspector.—Mr. J. Selby.

Abattoir Mechanic.—Mr. S. Mann.

Abattoir Clerk.—Mr. J. H. Dawkins.

Abattoir Cleaners.—Mr. J. A. Fourie, Mr. J. J. Swanepoel, Mr. F. Brandt.

Also.—2 Native Messengers (Office); 1 Native Interpreter (Location Office); 7 Native Cleaners (Abattoir); 6 Natives (Rodent Control); 1 Native Sprayer (Mosquito Control).

XIX.—GENERAL.

1.—HEALTH SERVICES REPORT

As a measure preliminary to re-organisation on a sound and modern footing, the Medical Officer of Health prepared a report, covering some 103 pages, which surveyed the services existing at the time of his appointment and the lines along which the Council might discuss the future development of municipal health activities in Benoni. A long series of recommendations was made at the conclusion of the report, which was presented to the Public Health Committee on the 13th of October, and it is a matter of considerable pleasure to the author to be able to report at the end of the year that more than half of the recommendations have been accepted and are in force, while of the rest the majority are receiving consideration.

2.—OFFICE ACCOMMODATION

It became necessary to draw to the attention of the Council the inadequate accommodation available for this Department, with especial regard to rooms in which various clinics could be held for Europeans. The Public Health Committee is giving careful consideration to these requirements.

3.—TRANSPORT

In order to provide transport for materials in connection with rodent control work, disinfection of infected materials, removal of samples taken for analysis, etc., the Council agreed to the purchase of a Plymouth closed van.

4.—SCHOOL MEDICAL INSPECTION

In June, the Committee agreed to a statement to be presented by the Medical Officer of Health to the Transvaal Education Commission, in which it was claimed that more satisfactory results could be achieved, to the ultimate benefit of the health of children who will be the future citizens of Benoni and of South Africa, if the medical inspection of school children in Benoni and the supervision of health matters in these schools were to be carried out by the medical staff of the Benoni Municipal Health Department. It was pointed out that, under the Council's intended scheme of clinic and other services, the health of the children in this area would be carefully supervised by the Municipal Health Department through the ante-natal clinics, home visiting, and the infant clinics. That when the child goes to school he comes under the jurisdiction of the Provincial Education Department's Medical Staff. The potential advantages of regular inspection, record of growth, development and defects of each individual child, and of continuity of advice given by the same health authority throughout, are lost under the present system. Further that it would appear that the Provincial Education Authority is unable to provide adequate services for the school children of Benoni. No children at all were examined in 1935. On an average each child is, at present, examined only once in its school life. There is no full-time school nurse for the Benoni area, although there are at last 3,000 European school children in Benoni. One school nurse deals with all schools in the Benoni, Brakpan and Springs areas—with the result that on an average each school is visited no more than once in each school term. That the present system of dual control has also some unsatisfactory points with regard to the control of the spread and the prevention of infectious diseases among school children. The Municipal Health authority, in a town of the size of Benoni, knowing local conditions and having its finger on all foci of infection within the area, is in a more favourable position to prevent such spread and to give advice on all points relating to the health of local school children. The local authority would also appear to be in a much better position to provide regular health education, illustrated by local material, in the schools.

5.—PUBLIC HEALTH BY-LAWS

The existing By-Laws framed many years ago, are unsuited to modern views of health and disease control. The Medical Officer of Health has regularly attended a series of meetings at which all Reef Municipal Health Departments were represented, for the purpose of drafting a set of Uniform Public Health By-Laws for use all along the Witwatersrand in Municipal areas. This enormous task has progressed satisfactorily.

REPORT "B"

UPON THE HOUSING OF THE PEOPLE.

The general lay-out of our town, and its development, has been described briefly in Volume I. of "Health Facts and Figures" (Benoni, 1937). But if we are to appreciate all the factors which affect the health of Benoni residents it becomes necessary to survey very carefully all conditions of housing within the Municipal area.

Unsatisfactory housing may affect the individual and the public health in five ways:—

i. By encouraging the spread of infectious diseases—such as lung tuberculosis, some forms of pneumonia, whooping cough, measles, scarlet fever, cerebrospinal meningitis, etc.—which are due to germs sprayed out in the breath of one person and inhaled by another. Such diseases are, therefore, commonly associated with over-crowding and with dwellings that are inadequately ventilated.

ii. By encouraging the occurrence of diseases like pneumonia and tuberculosis of the lungs where the dwellings are damp or draughty and the occupants are exposed to great extremes of temperature. Such conditions are commonly found in badly constructed, old, or inadequately insulated wood and iron shacks.

iii. By encouraging the occurrence of diseases of dirt such as louse-borne typhus fever, flea-borne plague, etc.—where the dwelling is so dirty and dilapidated that vermin are attracted to feed and to breed there.

iv. By encouraging the spread of those diseases of dirt which are caused by germs swallowed by the individual in infected food or drink. Such diseases are enteritis (especially of babies), enteric (typhoid) fever, and dysentery. They are especially prevalent where food is exposed to dirt containing these germs, and where flies — carrying the germs from filth to food—are numerous. These conditions are found on premises where the domestic water supply is inadequate, where there is over-crowding, where the kitchen and pantry are dirty and inadequate, where closet accommodation and refuse disposal is unsatisfactory, and where the people are ignorant or careless about the necessity for cleanliness in the home and in handling food.

v. By encouraging the development of a careless attitude toward personal and family health in dwellings where poverty, over-crowding, dirt and ignorance combine with lack of sunshne and of free movement of fresh air within the house. Where, in fact, an "unhealthy" atmosphere develops and permeates the home.

Since the house has so important an effect upon the health and happiness of our people, and especially upon the family which is the significant unit in all matters affecting the public health, it is necessary that we should have some yard-stick with which to measure the suitability of the dwellings in which Benoni residents live.

The minimum standards for the satisfactory housing of every family—white or coloured or black—resident in Benoni must include the following:—

A.—THE DWELLING

Must be weatherproof, must protect against extremes of temperature, and must be dry in walls, roof, and floor. The internal structure must be such that it can be kept clean. Must be large enough, according to the number of people occupying it, to prevent over-crowding; in this connection we may well accept the minimum standards of the Slums Act—40 square feet of floor space for each person. It must be efficiently cross-ventilated and supplied inside with adequate sunlight. There must be a sufficient water supply, preferably laid on inside, in the kitchen; and the house must be provided with a bath. No house should contain less than 2 rooms and the kitchen and pantry should be apart from the living room.

B.—THE ENVIRONMENT

The house and garden or yard must be self-contained and fenced; the area allotted to each dwelling must be sufficient to allow of free circulation of air and direct access of sunlight; either inside the dwelling or on the same stand there must be a closet, preferably a water closet, together with adequate drainage arrangements to carry off all liquid organic matter; provision must be made for the storage and frequent removal of solid refuse, and to prevent the soakage of filth into the ground in the immediate vicinity of the house; and facilities provided for the home washing and drying of clothes.

C.—GENERAL PROVISIONS

The house should have a good general amenity in its surroundings; the area in which it is erected should be free from soot, smells, noise, or nuisances from factories; there should be in the immediate neighbourhood sufficient transport facilities available at a daily cost within the scope of the pockets of the people; provision must be made for the recreation of the occupants in the open air, and in institutes, and also for schools, churches, gardens, and well-made and efficiently drained roads.

We may accept these simple standards (based on the original proposals of Dr. John Robertson, Medical Officer of Health of Birmingham) as the minimum necessary for a healthy population. It is a primary duty of this Department to ascertain how far they have been attained in Benoni. Therefore detailed surveys of the housing position are essential before any recommendations can be offered regarding future improvements. To complete such a survey for the Municipal area will take, with the existing staff, from two to three years. But it has been started, and some of the results can now be reported, in the following preliminary statement.

EUROPEAN DWELLINGS

The European population lives in the following areas:

i. Township proper—in brick houses built for the most part between 1910 and 1930. To the east end of the the town the houses tend to be smaller, less adequately ventilated and more over-crowded than those to the west end of the town.

ii. Township proper—in flats, which are becoming more frequent, and in boarding houses.

iii. Suburbs—including Westdene which contains larger, more recently built, houses on stands covering 1 acre or more; and Northmead, where the houses on smaller stands have mostly been built by owner-tenants with the assistance of Municipal housing loans.

iv.—Semi-rural areas—towards the periphery of the Municipal area, including dwellings of wood and iron, sometimes brick-lined, built on agricultural smallholdings. Judged by urban standards many of these dwellings are primitive.

v. Mine quarters — including detached houses for married workers and quarters for single men on the mine properties.

As a preliminary statement—until a detailed survey has been completed—we may say that the dwellings to the west of the Township proper, in the Suburbs, and on the Mine properties do generally comply with the minimum requirements for satisfactory housing laid down above, whereas those to the east of the Township proper and in the semi-rural areas are generally lacking in some of the more important of those requirements. It has been in the latter areas that slum properties have been found.

A full and detailed survey of all European housing will be started during the coming year. During 1936-1937 certain essential and urgent steps have been taken to deal with existing unsatisfactory dwellings in the Township. 49 rooms have been condemned and demolished on the instructions of the Department. Action has been taken to call upon owners to remove the insanitary, dirty, and fly-attractive open brick refuse bins which have been allowed to spring up in so many back yards, and these have been replaced by approved metal portable bins. The gradual connection of Township properties with the main sewerage system has led to a great improvement in the sanitary condition of many dwellings.

The most important action of the Department during the year has, however, been the careful inspection and supervision of all building plans for new dwellings or additions to or alterations of existing dwellings. A surprising number of defects was found in such plans during the first few months of the year—lack of cross-ventilation in living rooms, unsatisfactory Native quarters, absence of fly-proofing in earth closets, and inadequate rat-proofing of food stores and shops; but later, through close co-operation with the Town Engineer's Department, a real improvement has been developed and a decreasing number of building plans has had to be referred back by the Health Department.

The main defects in European dwellings are the inefficient ventilation and inadequate natural lighting which owners, architects, and builders have, through ignorance or carelessness, provided in the past for many Benoni houses. They failed to realise that satisfactory ventilation means free movement of air, and that this cannot be achieved where a door and a window on the same wall are the only air openings in the room. Almost equal to the fear of fresh air has been the dread of sunshine penetrating into the rooms of the older Benoni houses; even where the windows are broad enough they are frequently blocked up with blinds, curtains, and aspidistras—especially in the Township east area. These defects turn otherwise suitable dwellings into nests of gloom and ill-health.

A major and serious defect discovered is the presence of only one closet on many stands where both Europeans and their Native employees are living. This is gradually being overcome as the stands in question become connected to the sewerage system; but it is regrettable to have to report that certain stands had already been connected with the sewer, and one closet only erected, during the early part of the year before the Health Department had begun to scrutinise every drainage as well as every building plan. The different habits of many Natives, the greater likelihood of Natives from the uncontrolled rural areas being "carriers" of enteric germs, etc. — these are sufficient reasons for requiring the separate closets which the Municipal By-Laws insist upon.

NON-EUROPEAN DWELLINGS

The non-European population lives in the following areas:—

i. Township and Suburbs—in domestic servants' quarters on the properties of their employers. Generally speaking these dwellings are deficient in light and in cross-ventilation, while adequate ablution facilities are in most cases non-existent.

ii. Township — especially in the eastern area where a certain number of non-Europeans are living in most unsatisfactory dwellings. In the absence of any alternative accommodation in the Location it is impossible to insist upon the evacuation of these rooms by Natives.

iii. Locations—including the Asiatic Bazaar, Native Location and Coloured Section—about which further information is given below. There are also certain smaller locations on the mine properties which are generally unsatisfactory.

iv. Semi-rural areas—where a considerable number of Native exist as squatters or as farm employees in most insanitary wood and iron shacks.

v. Compounds—in which single Natives are housed on the Mines, at the Municipal compound, or in the Municipal Location hostel.

With the exception of some of the domestic servants' quarters in the Township and Suburbs, and of the Mine and Municipal compounds, it may be said that few of the other non-European dwellings reach the minimum standards for healthful housing laid down above. In view of this position and that conditions in the Locations appeared to need urgent attention, the Town Council called first for a survey of housing in the Native Location, Asiatic Bazaar and Coloured Section. These large surveys have been completed during the year; the findings have been presented in detail elsewhere but the general conclusions were as follows:—

NATIVE LOCATION

9,399 Natives (5,818 adults and 3,581 children) are found to be resident on 1,150 stands, most of which are 50ft. x 50ft. and all are rented by the Native Stand-holders at 10s. a month from the Municipality. 89 Stands, housing 405 persons, contain Municipal houses, rented by the occupants; the other 1,061 stands housing 8,994 persons who are living in dwellings erected by private Native owners.

Of the 89 Municipal dwellings, 64 are of brick, are not over-crowded, and are reasonably satisfactory; the remaining 25 are of wood and iron and are unfit for human habitation.

Of the 1,061 stands holding private dwellings, almost all of wood and iron, those in the northern sections i. to vii. (inclusive) comprise 721 stands housing 6,913 persons (9.6 persons per stand), and almost all of these are unfit for human habitation. The remainder of the dwellings, in the southern sections viii., ix., and x., are more recent, less over-crowded, and though of wood and iron are in better condition and are not yet unfit for human habitation. The number of persons served by 1 earth closet varies from 77 in Section i., to 39 in Section v., to 7 in Section x.

The water supply is by stand pipes in the streets; in some instances the nearest tap is 200 yards from a dwelling, and the supply throughout is totally inadequate for the supply of the separate houses in so far that water has to be carried in tins by the householders from the pipes to their houses for all domestic purposes—a state of affairs which encourages household uncleanliness. The roads are undrained and insanitary. Some stands contain rough stables in which cows and other animals are housed. Churches, schools, and shops occupied by Native traders are in existence. An open space to the south provides a rough playing ground for the residents.

Considerable individual improvements have been made by Native owners during the year, as detailed below, but these have only served to some extent to make certain premises less unfit for human habitation than they were previously.

Death rates per 1,000 population per annum over the period 1931-1936 were:—

Natives, Locations, 37.78; Natives, Mines, 7.42; Europeans, 8.92; Coloureds, 28.61; Indians, 26.95. Of the deaths occurring in the Locations during this period 69% were due to the acute bowel infections associated with dirt and to the lung diseases associated with insanitary housing and over-crowding.

ASIATIC BAZAAR

711 Indians, 183 Coloureds and 1,973 Natives are resident in this area which is contiguous with the Native Location. Of the 119 premises surveyed, all in private ownership, 3 are in good condition and require but little attention; 38 require repairs and extensive renovation; 67 require demolition of a portion of the premises; and 11 require total demolition. Of the 67 calling for partial demolition, few can be put into a state fit for habitation by repair of a portion and demolition of the remaining rooms;

so the total of premises in the Asiatic Bazaar condemned and to be demolished is actually nearly 78 out of the total of 119 premises. Roads, water supply and surface drainage is as described for the Native Location, but overcrowding and the insanitary condition of the many stables are worse.

COLOURED SECTION

In this area there are 24 Municipal brick houses of fair structure though inadequate as to height and natural lighting; these house 118 Coloured persons. There are also 103 privately built houses, mostly of wood and iron, housing 939 persons (9.1 per house), of which all but 10 are condemned and should be demolished.

The final conclusion reached from this survey is that the great majority of dwellings in these three non-European areas are totally unfit for human habitation, and should be vacated and demolished. In the Asiatic Bazaar, where no Natives should be living, the Native population provides the main cause for the existing overcrowding in most insanitary rooms; until new houses are built in the Native Location to house these people it is impossible to relieve the position.

These surveys, then, have served to show the extent of the existing non-European housing problem. It is seen that houses are required at once to re-house at least 9,000 Natives and 900 Coloureds. Until a start is made with the erection of these dwellings it will not be possible to demolish the existing slums. There is also need for dwellings to house approximately 2,500 Natives who are resident elsewhere in the Municipal area—apart from those living on their employers' premises, the compounds, and the hostel.

During the year the following improvements were carried out in the Location by private Native owners, on the instructions of this Department:—

1,027 rooms were demolished; 122 houses were renovated; 78 earth closets were constructed; 28 closet service doors were fitted; 43 refuse bins were provided; 29 covers provided for refuse bins.

35 new houses were erected by private Native owners in the Location after the plans had been approved by this Department.

A survey of 11 schools in the Location was completed in May; the findings were as follows:—

	Material	Condition of Struc	Teachers	Scholars	Av. space per child (sq. ft.)	E.C.s	Washing Facil.	Playing space	
Methodist	Br.	G	1	50	8.5	0	0	0	0
A.M.E. Church	W. I.	F	3	80	11.1	1	0	IN	
Church of England	W. I.	B	3	97	7.8	1	0	IN	
Am-Zulu Mission	W. I.	B	1	30	10.3	0	0	IN	
St. Alban's, i.	Br.	G	6	242	9.2	0	0	IN	
Private (Mgabedeli)	W. I.	F	1	76	5.4	0	0	IN	
D. R. Church	W. I.	G	2	98	5.4	0	0	IN	
R. C. Church	Br.	G	6	215	5.9	6	0	F	
St. Alban's, ii.	W. I.	F	7	350	5.6	1	0	IN	
Eur-african	Conc.	G	13	475	12.6	17	—	G	
Wesleyan Church	W. I.	F	5	200	6.5	4	0	IN	

Br., Brick; W.I., Wood and Iron; Conc., Concrete; B., Bad; F., Fair; G., Good; In., Inadequate.

Apart from the Eur-African School, not one is suitable for its purpose—as regards structure, lighting, ventilation, floor space, sanitary accommodation, washing or cloak room facilities, playing space and condition and type of desks.

REPORT "C" (STATISTICAL TABLES)

METEOROLOGICAL RECORDS

(a) RAINFALL: BENONI FIRE STATION

	1936–1937	AVERAGE 1932-1936
July	0·02	0·63
August	0·00	0·40
September	0·47	0·43
October	1·27	1·52
November	8·51	4·89
December	1·57	4·05
January	4·60	4·05
February	2·42	3·55
March	1·76	3·99
April	1·53	1·16
May	0·02	1·72
June	0·00	0·11
TOTAL	22·17 ins.	26·50 ins.

(b) VARIOUS RECORDS: RAND AIRPORT. GERMISTON

(By the courtesy of the Chief Meteorologist, Department of Irrigation, Pretoria.)

	TEMPERATURE				RELATIVE HUMIDITY		RAINFALL (INCHES)	
	MEAN 36–37	MAX. 32–36	MEAN 36–37	MIN. 32–36	36–37	32–36	36–37	32–36
July	61·3	61·0	39·3	39·2	62	64	0·02	0·18
August	67·4	65·9	41·9	42·0	55	60	0·00	0·25
September	69·2	72·7	44·8	48·5	52	53	0·86	0·48
October	74·4	78·7	51·9	54·0	63	58	1·29	1·41
November	74·0	75·5	54·3	53·9	68	70	6·10	4·96
December	79·4	76·5	57·8	54·9	64	69	1·65	4·90
January	76·6	78·4	58·4	57·5	77	70	6·35	3·94
February	75·4	76·9	58·5	56·4	79	75	6·28	3·80
March	76·3	74·4	53·7	55·1	70	75	3·08	3·73
April	70·4	70·9	48·8	49·7	68	70	2·04	1·05
May	69·0	65·2	45·3	44·0	49	66	0·23	1·96
June	63·3	60·7	39·2	38·3	45	65	0·00	0·12
	71·4	71·5	49·5	49·5	63	66	27·90	26·78

POPULATION

(Based on 1936 Census return.)

	EUROPEAN			NATIVE			COLOURED			INDIAN			TOTAL		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	8,209	7,892	16,181	3,388	1,074	4,462	157	155	312	11	0	11	11,765	9,201	20,966
Location	4	0	4	5,658	5,995	11,653	567	539	1,106	464	381	845	6,693	6,915	13,608
Semi-Rural Areas	492	450	942	614	430	1,044	46	46	92	15	10	25	1,167	936	2,103
(A)	8,705	8,422	17,127	9,660	7,499	17,159	770	740	1,510	490	391	881	19,625	17,052	36,677
New Kleinfontein	275	240	515	5,939	355	6,294	1	3	4	4	1	5	6,219	599	6,818
Van Ryn Estates	195	150	345	3,837	119	3,956	14	14	28	10	3	13	4,056	286	4,342
Modder B ...	592	337	929	5,199	375	5,574	57	38	95	1	1	2	5,849	751	6,600
Modder Deep ...	189	139	328	2,683	75	2,758	3	3	6	—	—	—	2,875	217	3,092
Modder East ...	210	140	350	65	49	114	—	—	—	—	—	—	275	189	464
New Modder ...	556	432	988	10,370	121	10,491	121	112	233	31	22	53	11,078	687	11,765
Van Ryn Deep...	273	216	489	7,338	170	7,508	—	—	—	3	2	5	7,614	388	8,002
(B)	2,290	1,654	3,944	35,431	1,264	36,695	196	170	366	49	29	78	37,966	3,117	41,083
TOTAL	10,995	10,076	21,071	45,091	8,763	53,854	966	910	1,876	539	420	959	57,951	20,169	77,760

(b) POPULATION—IN AGE GROUPS

	EUROPEAN						COLOURED				INDIAN			
	Male		Female		Total		M.	F.	Total		M.	F.	Total	
	No.	%	No.	%	No.	%	No.	No.	No.	%	No.	No.	No.	%
0– 4	1,011	9·2	1,039	10·3	2,050	9·7	140	120	260	13·9	65	82	147	15·3
5– 9	991	9·0	977	9·7	1,968	9·3	128	127	255	13·6	70	75	145	15·1
10–14	939	8·6	926	9·2	1,865	8·9	110	108	218	11·6	73	55	128	13·3
15–19	1,031	9·4	1,018	10·1	2,049	9·7	97	91	188	10·0	52	38	90	9·4
20–24	1,352	12·3	1,134	11·2	2,486	11·8	79	88	167	8·9	63	42	105	10·9
25–29	1,236	11·3	1,046	10·4	2,282	10·9	82	64	146	7·8	42	34	76	8·0
30–34	874	7·9	752	7·5	1,626	7·7	70	74	144	7·7	28	34	62	6·5
35–39	651	5·9	663	6·6	1,314	6·2	51	57	108	5·8	22	18	40	4·2
40–44	686	6·2	660	6·5	1,346	6·4	55	43	98	5·2	21	8	29	3·0
45–49	605	5·5	528	5·2	1,133	5·4	44	36	80	4·3	22	11	33	3·5
50–54	503	4·6	436	4·3	939	4·5	36	30	66	3·5	20	12	32	3·3
55–59	453	4·1	350	3·5	803	3·8	17	22	39	2·1	18	0	18	1·9
60–64	344	3·1	248	2·5	592	2·8	17	17	34	1·8	22	5	27	2·9
65–69	183	1·7	140	1·4	323	1·5	23	19	42	2·2	10	4	14	1·4
70–74	80	0·7	89	0·9	169	0·8	11	6	17	0·9	5	2	7	0·7
75–79	43	0·4	43	0·4	86	0·4	3	3	6	0·3	2	0	2	0·2
80–up	13	0·1	27	0·3	40	0·2	3	5	8	0·4	4	0	4	0·4
TOTAL	10,995	100·0	10,076	100·0	21,071	100·0	966	910	1,876	100·0	539	420	959	100·0

	EUROPEAN				COLOURED	INDIAN
	Male	Female	Total	%	%	%
Under 5 years ...	1,011	1,039	2,050	9·7	13·9	15·3
5–19	2,961	2,921	5,882	27·9	35·2	37·8
20–44	4,799	4,255	9,054	43·0	35·4	32·6
45 and over	2,224	1,861	4,085	19·4	15·5	14·3

15–44 (FEMALES)—EUROPEAN	5,273	52·3%
COLOURED	417	45·8%
INDIAN	174	41·4%

BIRTHS

(a) TOTAL IN MONTHS

	EURO-PEAN			NATIVE						COL-OURED			INDIAN			ALL RACES		
				MINES			LOC., ETO.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
July	34	35	69	1	0	1	13	20	33	4	1	5	4	4	8	56	60	116
August	28	19	47	1	2	3	14	12	26	0	4	4	0	1	1	43	38	81
September ...	26	27	53	0	4	4	18	12	30	5	8	13	2	2	4	51	53	104
October	28	27	55	0	0	0	10	16	26	1	5	6	5	1	6	44	49	93
November ...	30	24	54	1	1	2	14	10	24	8	7	15	2	3	5	55	45	100
December... ...	21	27	48	4	2	6	22	12	34	4	1	5	2	0	2	53	42	95
January	19	14	33	1	0	1	17	18	35	5	3	8	1	3	4	43	38	81
February	20	24	44	1	2	3	18	14	32	5	7	12	0	4	4	44	51	95
March	28	21	49	1	2	3	13	13	26	3	2	5	1	0	1	46	38	84
April	19	12	31	1	0	1	12	13	25	1	4	5	0	1	1	33	30	63
May	19	23	42	0	2	2	14	13	27	5	5	10	2	1	3	40	44	84
June	19	23	42	1	1	2	16	21	37	2	2	4	3	1	4	41	48	89
TOTAL	291	276	567	12	16	28	181	174	355	43	49	92	22	21	43	549	536	1,085

(b) TOTAL IN DISTRICTS

	EUROPEAN			NATIVE			COLOURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	246	229	475	4	3	7	3	5	8	1	0	1	254	237	491
Location	0	0	0	174	171	345	36	39	75	20	19	39	230	229	459
Semi-Rural Areas	17	16	33	3	0	3	1	1	2	0	0	0	21	17	38
(A)	263	245	508	181	174	355	40	45	85	21	19	40	505	483	988
New Kleinfontein	4	9	13	2	0	2	0	0	0	0	0	0	6	9	15
Van Ryn Estates	1	2	3	3	5	8	0	0	0	0	1	1	4	8	12
Modder B	10	7	17	5	10	15	1	1	2	0	0	0	16	18	34
Modder Deep	1	1	2	0	1	1	0	0	0	0	0	0	1	2	3
Modder East	4	4	8	1	0	1	0	0	0	0	0	0	5	4	9
New Modder	5	5	10	1	0	1	2	3	5	1	1	2	9	9	18
Van Ryn Deep	3	3	6	0	0	0	0	0	0	0	0	0	3	3	6
(B)	28	31	59	12	16	28	3	4	7	1	2	3	44	53	97
TOTAL	291	276	567	193	190	383	43	49	92	22	21	43	549	536	1,085

(c) TOTAL ILLEGITIMATE BIRTHS

	EUROPEAN	NATIVE MINES	NATIVE LOCATION	COLOURED	INDIAN	TOTAL
Male	3	1	89	17	1	111
Female	4	2	98	20	1	125
TOTAL	7	3	187	37	2	236

(d) BIRTH RATES

	BIRTH RATES			ILLEGITIMACY RATES	MASCULINITY RATES
	(Births per 1,000 population)	*	(Births per 1,000 women 15–44 years)	(% illeg. to Total Briths)	(Males : Females)
All Races	13·93	(10·32)	—	21·8%	102 : 100
European	26·91	(22·43)	107·5	1·23%	105 : 100
Native—Mines ...	0·76	(—)	—	10·7%	102 : 100
Location,etc.	20·68	(9·43)	—	52·7%	
Coloured	49·20	(45·09)	220·6	40·2%	88 : 100
Indian	44·83	(42·11)	247·1	4·7%	105 : 100
All Non-European ...	9·13	(5·68)	—	44·2%	99 : 100

560 Legitimate European births per 3,224 married European women aged 15 — 44 years = 173.7 Legitimate births per 1,000 married women of conceptive age.

7 Illegitimate European births per 2,049 unmarried and widowed European women aged 15—44 years = 3.41 illegitimate births per 1,000 unmarried and widowed women of conceptive age.

* (   ) 1931-1936

DEATHS

(a) TOTAL IN MONTHS

	EURO-PEAN			NATIVE						COL-OURED			INDIAN			ALL RACES		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
July	9	6	15	21	3	24	22	12	34	1	0	1	1	0	1	54	21	75
August	10	4	14	17	0	17	14	9	23	1	1	2	0	1	1	42	15	57
September	15	5	20	20	3	23	19	9	28	0	2	2	0	1	1	54	20	74
October	11	5	16	22	1	23	13	13	26	3	1	4	0	0	0	49	20	69
November	12	7	19	29	1	30	17	20	27	1	2	3	0	0	0	59	30	89
December	10	5	15	24	1	25	20	24	44	3	2	5	0	0	0	57	32	89
January	13	3	16	20	0	20	22	25	47	2	1	3	1	0	1	58	29	87
February	2	3	5	18	0	18	26	19	45	4	1	5	1	0	1	51	23	74
March	7	6	13	25	4	29	17	24	41	2	0	2	2	1	3	53	35	88
April	6	6	12	14	0	14	18	18	36	1	0	1	0	0	0	39	24	63
May	9	7	16	9	2	11	12	14	26	4	1	5	0	0	0	34	24	58
June	12	7	19	29	0	29	14	11	25	2	1	3	2	1	3	59	20	79
TOTAL	116	64	180	248	15	263	214	198	412	24	12	36	7	4	11	609	293	902

(b) DEATH RATES

(Deaths per 1,000 population)

	Males	Females	Total *	
ALL RACES	10·59	14·03	11·58	(15·74)
EUROPEAN	10·55	6·35	8·54	(8·92)
NATIVE—MINES	7·03	11·87	7·15	(7·92)
LOCATION, ETC.	22·15	26·40	24·00	(37·78)
COLOURED	24·84	13·19	19·25	(28·61)
INDIAN	12·98	9·52	11·47	(26·95)
ALL NON-EUROPEAN	10·58	22·69	12·71	(18·35)

DEATHS OF CHILDREN UNDER 5 YEARS PER 1,000 CHILDREN LIVING UNDER 5

EUROPEAN	22.88
NATIVE	—
COLOURED	76.90
INDIAN	47.6

* ( ) 1931-936.

(c) TOTAL IN AGE GROUPS

	EURO-PEAN			NATIVES						COL-OURED			INDIAN			TOTAL		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
0	20	11	31	10	10	20	94	92	186	11	5	16	4	1	5	139	119	258
1	4	4	8	1	0	1	25	22	47	2	2	4	0	1	1	32	29	61
2	3	1	4	0	1	1	2	8	10	—	—	—	—	—	—	5	10	15
3	0	1	1	0	0	0	2	3	5	—	—	—	1	0	1	3	4	7
4	2	1	3	0	0	0	2	2	4	—	—	—	—	—	—	4	3	7
5– 9	0	0	0	1	0	1	1	4	5	0	1	1	—	—	—	2	5	7
10–14	1	1	2	1	0	1	3	5	8	—	—	—	—	—	—	5	6	11
15–19	1	1	2	14	0	14	4	4	8	1	0	1	—	—	—	20	5	25
20–24	5	2	7	30	0	30	7	6	13	0	0	0	1	0	1	43	8	51
25–29	3	2	5	60	1	61	10	12	22	2	1	3	—	—	—	75	16	91
30–34	4	3	7	49	1	50	14	5	19	0	2	2	—	—	—	67	11	78
35–39	3	2	5	40	1	41	8	9	17	1	0	1	—	—	—	52	12	64
40–44	2	2	4	12	1	13	10	3	13	4	0	4	1	0	1	29	6	35
45–49	6	0	6	18	0	18	10	6	16	1	0	1	0	1	1	35	7	42
50–54	9	5	14	8	0	8	8	2	10	0	1	1	0	1	1	25	9	34
55–59	16	2	18	1	0	1	1	6	7	—	—	—	—	—	—	18	8	26
60–64	11	10	21	0	0	0	3	1	4	—	—	—	—	—	—	14	11	25
65–69	15	4	19	0	0	0	5	4	9	2	0	2	—	—	—	22	8	30
70–74	6	7	13	1	0	1	1	2	3	—	—	—	—	—	—	8	9	17
75–79	5	3	8	2	0	2	2	1	3	—	—	—	—	—	—	9	4	13
80–up	0	2	2	0	0	0	2	1	3	—	—	—	—	—	—	2	3	5
	116	64	180	248	15	263	214	198	412	24	12	36	7	4	11	609	293	902

(d) TOTAL IN DISTRICTS

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			TOTAL		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	85	54	139	18	11	29	3	3	6	0	0	0	106	68	174
Location	0	0	0	183	176	359	14	7	21	6	4	10	203	187	390
Semi-Rural Areas	10	2	12	13	11	24	1	1	2	1	0	1	25	14	39
(A)	95	56	151	214	198	412	18	11	29	7	4	11	334	269	603
New Kleinfontein	5	3	8	45	3	48	0	0	0	0	0	0	50	6	56
Van Ryn Estates	1	0	1	38	2	40	0	0	0	0	0	0	39	2	41
Modder B	5	4	9	34	4	38	1	0	1	0	0	0	40	8	48
Modder Deep	2	0	2	12	0	12	0	0	0	0	0	0	14	0	14
Modder East	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
New Modder	7	0	7	71	3	74	5	1	6	0	0	0	83	4	87
Van Ryn Deep	0	1	1	48	3	51	0	0	0	0	0	0	48	4	52
(B)	21	8	29	248	15	263	6	1	7	0	0	0	275	24	289
TOTAL	116	64	180	462	213	675	24	12	36	7	4	11	609	293	902

(e) DETAILED CAUSES OF DEATH

	EUR.			NATIVES						COL.			IND.			ALL		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
I *Infectious Diseases:*																		
001 Enteric Fever	3	0	3	13	1	14	5	2	7	1	0	1	0	0	0	22	3	25
003 Typhus Fever	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
008 Measles	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	2	0	2
010 Whooping Cough ...	0	3	3	0	0	0	3	3	6	0	0	0	0	0	0	3	6	9
012 Influenza (Lungs) ...	3	2	5	9	0	9	0	0	0	0	0	0	0	0	0	12	2	14
013 Influenza (not Lungs)	1	0	1	1	0	1	1	0	1	0	0	0	0	0	0	3	0	3
015 Dysentery Amoebic	0	0	0	1	0	1	2	0	2	0	0	0	0	0	0	3	0	3
016 Dysentery Bacillary	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
017 Dysentery, other ...	0	0	0	1	0	1	1	0	1	0	0	0	0	0	0	2	0	2
022 Erysipelas	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	2	0	2
025 C.S. Meningitis ...	2	0	2	7	0	7	0	1	1	1	1	1	1	0	0	10	2	12
030 Tuberculosis, Lungs	3	0	3	13	1	14	20	20	40	0	1	1	2	0	1	36	23	59
031 do. Nerves	0	0	0	2	0	2	1	0	1	0	0	0	0	0	0	3	0	3
032 do. Intestines	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
038 do. other organs	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
039 Disseminated T.B. ...	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
042 Syphilis	0	0	0	2	0	2	2	4	6	1	0	1	0	0	0	5	4	9
045 Septicaemia	1	0	1	4	0	4	0	0	0	0	0	0	0	0	0	5	0	5
047 Malaria	0	0	0	3	0	3	1	0	1	0	0	0	0	0	0	4	0	4
TOTAL : I	15	5	20	61	2	63	37	20	67	4	2	6	0	1	1	117	40	157
II *Malignant Tumours:*																		
100 Cancer, Mouth ...	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	2	0	2
101 do. Diges. organs	4	7	11	1	0	1	4	1	5	0	0	0	0	0	0	9	8	17
103 do. Uterus ...	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
107 do. Bladder ...	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
109 do. other organs	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2
TOTAL : II	8	7	15	2	0	2	5	2	7	0	0	0	0	0	0	15	9	24
III *Rheumatism, etc.:*																		
150 Rheumatism, Heart	1	1	2	2	0	2	2	4	6	0	0	0	0	0	0	5	5	10
151 Chronic Rheumatism	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
153 Diabetes	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
154 Scurvy	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
157 Rickets	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
165 Disease of Thynus ...	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
TOTAL : III ...	3	5	8	3	0	3	3	4	7	0	0	0	0	0	0	9	9	18
IV *Diseases of Blood:*																		
200 Purpura	2	0	2	0	0	0	2	0	2	0	0	0	0	0	0	4	0	4
204 Leucaemia	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2
TOTAL : IV	3	0	3	1	0	1	2	0	2	0	0	0	0	0	0	6	0	6

Detailed Causes of Death—Continued

	EUR.			NATIVES						COL.			IND.			ALL		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
V *Chronic Poisonings:*																		
250 Alcoholism	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
TOTAL: V	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
VI *Diseases of Nervous System*																		
300 Encephalitis	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
301 Simple Meningitis ...	0	0	0	9	0	9	1	0	1	0	0	0	0	0	0	10	0	10
304 Cerebral Haemorrage	4	5	9	1	0	1	1	3	4	0	1	1	0	0	0	6	9	15
305 Cerebral Embolism...	1	2	3	0	0	0	0	1	1	0	0	0	0	0	0	1	3	4
307 Other Paralyses ...	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
309 Other Insanity ...	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
310 Epilepsy	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	2	0	2
313 Other Nerv. Diseases	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
315 Disease of Mastoid...	0	0	0	1	0	1	0	1	1	1	0	1	0	0	0	2	1	3
TOTAL: VI	7	8	15	12	0	12	3	6	9	1	1	2	0	0	0	23	15	38
VII *Diseases of Circulatory System:*																		
350 Pericarditis	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	2	0	2
351 Acute Endocarditis...	0	1	1	0	0	0	2	0	2	0	0	0	0	0	0	2	1	3
352 Valvular Dis. of Heart	1	3	4	0	0	0	2	0	2	1	0	1	0	0	0	4	3	7
353 Acute Myocarditis ...	0	1	1	0	0	0	0	3	3	0	0	0	0	0	0	0	4	4
345 Fatty Heart	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
355 Other Myocardial Dis.	1	1	2	0	0	0	5	5	10	0	0	0	1	0	1	7	6	13
356 Angina Pectoris ...	0	0	0	1	0	1	0	0	0	0	1	1	0	0	0	1	1	2
357 Other Dis. of Heart	7	3	10	2	0	2	5	2	7	1	0	1	0	0	0	15	5	20
358 Aneurysm	3	2	5	1	0	1	0	0	0	0	0	0	0	0	0	4	2	6
359 Arterio-Sclerosis ...	3	0	3	2	0	2	1	0	1	0	0	0	0	0	0	6	0	6
363 Disease of Veins ...	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL: VII ...	17	12	29	8	0	8	15	10	25	3	1	4	1	0	1	44	23	67
VIII *Diseases of Respiratory System:*																		
401 Disease of Larynx...	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2	0	2
402 Bronchitis, Acute ...	2	0	2	3	1	4	9	10	19	1	0	1	0	0	0	15	11	26
403 do. Chronic	0	1	1	0	0	0	2	1	3	1	0	1	0	1	1	3	3	6
404 Broncho-Pneumonia	8	7	15	10	2	12	25	41	66	4	1	5	1	0	1	48	51	99
405 Pneumonia, Lobar...	9	0	8	62	1	63	9	6	15	1	1	2	0	1	1	81	9	90
406 do. other ...	1	1	2	3	0	3	2	4	6	1	1	2	0	0	0	7	6	13
407 Empyaema	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
412 Other Dis. of Lungs	0	1	1	1	0	1	1	0	1	0	0	0	0	0	0	2	1	3
413 Silicosis (without T.B.)	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7
414 do. (with T.B.)	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
TOTAL: VIII ...	30	10	40	79	4	83	49	62	111	8	3	11	2	2	4	168	81	249
IX *Diseases of Digestive System:*																		
541 Disease of Tonsils ...	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
453 Ulcer of Stomach ...	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
456 Diarrhoea & Enteritis (under 2)	3	1	4	3	4	7	45	40	85	3	2	5	3	1	4	57	48	105
457 Diarrhoea & Enteritis (2 and over) ...	0	0	0	0	1	1	3	6	9	0	0	0	0	0	0	3	7	10
458 Appendicitis	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
459 Hervia	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
460 Intestinal Obstruction	1	1	2	2	0	2	1	1	2	0	0	0	0	0	0	4	2	6
461 Other Dis. of Intestines	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
463 Cirrhosis of Liver ...	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2
464 Acute Yellow Atrophy	0	0	0	1	0	1	1	0	1	0	0	0	0	0	0	2	0	2
465 Other Diseases of Liver	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2	0	2
466 Biliary Calculi ...	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
469 Peritonitis	0	0	0	3	0	3	1	2	3	0	0	0	0	0	0	4	2	6
TOTAL: IX ...	8	3	11	13	5	18	52	49	101	3	2	5	4	1	5	80	60	140
X *Diseases of Kidneys, etc.:*																		
500 Nephritis, Acute ...	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
501 do. Chronic ...	1	2	3	0	0	0	1	0	1	0	0	0	0	0	0	2	2	4
503 Other Dis. of Kidneys	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL: X	1	2	3	1	0	1	2	0	2	0	0	0	0	0	0	4	2	6

Detailed Causes of Death—Continued

	EUR.			NATIVES						COL.			IND.			ALL		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
XI *Diseases of Pregnancy:*																		
552 Ectopic Gestation ...	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	2
554 Puerperal Haemorrhage ...	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
555 Puerperal Sepsis ...	0	1	1	0	0	0	0	2	2	0	0	0	0	0	0	0	3	3
556 do. Albuminuria ...	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
557 Other Toxaemias ...	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
559 Other Accidents of Birth	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	2
560 Other Puerperal Cinos	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
TOTAL: XI ...	0	3	3	0	0	0	0	8	8	0	0	0	0	0	0	0	11	11
XIII *Diseases of Bones, etc.:*																		
650 Acute Osteomyelites	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	2	2
652 Disease of Joints ...	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL: XIII ...	0	0	0	1	1	2	0	1	1	0	0	0	0	0	0	1	2	3
XVI *Congenital Malformations:*																		
700 Cong. Hydrocephalus	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
702 Cong. Heart Malfn.	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
703 Other Cong. Malfn.	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
TOTAL: XIV ...	3	1	4	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4
XV *Diseases of Early Infancy:*																		
750 Congenital Debility	5	2	7	0	1	1	9	8	17	1	0	1	0	0	0	15	11	26
751 Premature Birth ...	3	3	6	1	1	2	9	5	14	0	2	2	0	0	0	13	11	24
752 Injury at Birth ...	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
753 Other Diseases ...	1	1	2	0	1	1	16	9	25	2	1	3	0	0	0	19	12	31
TOTAL: XV ...	9	6	15	1	3	4	35	22	57	3	3	6	0	0	0	48	34	82
XVI *Old Age:*																		
800 Old Age	1	2	3	2	0	2	1	0	1	0	0	0	0	0	0	4	2	6
TOTAL: XVI ...	1	2	3	2	0	2	1	0	1	0	0	0	0	0	0	4	2	6
XVII *Deaths from Violence:*																		
854 Suicide by Firearms	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
858 Suicide by other means	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
859 Infanticide	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
861 Homicide by cutting	0	0	0	2	0	2	4	1	5	0	0	0	0	0	0	6	1	7
862 do. by other means	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
868 Accidental Burns ...	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	2	1	3
870 do. Drowning	1	0	1	3	0	3	0	0	0	0	0	0	0	0	0	4	0	4
871 do. Injury by Firearms	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
872 Accidental Injury by Cutting	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
873 Mine Accidents ...	1	0	1	42	0	42	0	0	0	0	0	0	0	0	0	43	0	43
875 Machinery Accidents	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	2	0	2
876 Acc. Inj. by Railways	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
877 do. Motors...	3	0	3	9	0	9	2	0	2	1	0	1	0	0	0	15	0	15
878 do. Cycles ...	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
880 Accidents, other than	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
Land Transport	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
883 Injury by Fall ...	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2
891 Lightning	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL: XVII ...	10	0	10	63	0	63	8	3	11	2	0	2	0	0	0	83	3	86
XVIII *Ill-defined Diseases:*																		
951 Cause unstated ...	1	0	1	1	0	1	1	1	2	0	0	0	0	0	0	3	1	4
TOTAL: XVIII ...	1	0	1	1	0	1	1	1	2	0	0	0	0	0	0	3	1	4
GRAND TOTAL ...	116	64	180	248	15	263	214	198	412	24	12	36	7	4	11	609	293	902

(f) DEATH RATES: VARIOUS CAUSES

(According to Short List of Census Office)

	All Races	Eur.	Natives			Col.	Ind.	All Non-Eur.	1931–36 All Races
			Mines	Loc.	All				
1. Enteric Fever	0·32	0·14	0·38	0·41	0·39	0·53	—	0·39	*(0·79)
2. Typhus	0·01	0·05	—	—	—	—	—	—	(—)
3. Smallpox	—	—	—	—	—	—	—	—	(—)
4. Measles	0·03	—	0·05	—	0·04	—	—	0·04	(0·06)
5. Scarlet Fever	—	—	—	—	—	—	—	—	(0·009)
6. Whooping Cough	0·12	0·14	—	0·35	0·11	—	—	0·11	(0·23)
7. Diphtheria	—	—	—	—	—	—	—	—	(0·04)
8. Influenza	0·23	0·28	0·27	0·06	0·20	—	—	0·19	(0·38)
9. Dysentery	0·08	—	0·05	0·23	0·11	—	—	0·07	(0·26)
10. C. Spinal Meningitis ...	0·15	0·09	0·19	0·06	0·15	1·07	—	0·18	(0·13)
11. Pulmonary Tuberculosis ...	0·76	0·14	0·38	2·33	1·00	0·53	1·04	0·99	(0·72)
12. T.B. Meningitis	0·04	—	0·05	0·06	0·06	—	—	0·05	(0·02)
13. Other Tuberculosis	0·04	—	0·08	—	0·06	—	—	0·05	(0·06)
14. Leprosy	—	—	—	—	—	—	—	—	(—)
15. Syphilis	0·12	—	0·05	0·35	0·15	0·53	—	0·16	(0·17)
16. Malaria	0·05	—	0·08	0·06	0·07	—	—	0·07	(0·01)
17. Cancer	0·31	0·71	0·05	0·41	0·19	—	—	0·16	(0·28)
18. Cerebral Haemge. (304-305)	0·25	0·57	0·03	0·29	0·11	0·53	—	0·12	(0·19)
19. Cardiac Disease (350-357)	0·69	1·00	0·11	1·15	0·52	2·14	1·04	0·58	(0·91)
20. Bronchitis	0·41	0·14	0·11	1·28	0·48	1·07	1·04	0·51	(0·59)
21. Pneumonia	2·59	1·24	2·12	5·07	3·06	4·81	2·09	3·10	(3·47)
22. Silicosis (No. T.B.)	0·09	0·33	—	—	—	—	—	—	(0·12)
23. Silicosis (with T.B.) ...	0·03	0·09	—	—	—	—	—	—	(0·03)
24. Other Respiratory Disease	0·08	0·09	0·03	0·12	0·06	—	1·04	0·07	(0·13)
25. Ulcer, Stomach or Duod.	0·01	—	—	0·06	0·02	—	—	0·02	(0·001)
26. Diarr. & Enteritis (under 2)	1·35	0·19	0·19	4·95	1·70	2·67	4·17	1·78	(2·57)
27. Appendicitis	0·03	0·09	—	—	—	—	—	—	(0·08)
28. Cirrhosis of Liver	0·03	0·05	0·03	—	0·02	—	—	0·02	(0·04)
29. Npehritis	0·06	0·14	—	0·12	0·04	—	—	0·04	(0·20)
30. Puerperal Sepsis	0·04	0·05	—	0·12	0·04	—	—	0·04	(0·09)
31. Other Acc. & Dis. of Preg.	0·10	0·09	—	0·35	0·11	—	—	0·11	(0·07)
32. Congenital Malformations	0·05	0·19	—	—	—	—	—	—	(0·03)
33. Diseases of Early Infancy	1·05	0·71	0·11	3·32	1·13	3·21	—	1·18	(1·15)
34. Suicide	0·03	0·09	—	—	—	—	—	—	(0·04)
35. Mine Accidents	0·55	0·05	1·14	—	0·78	—	—	0·74	(0·74)
Road Accidents	0·21	0·14	0·30	0·12	0·24	0·53	—	0·25	(0·17)
Other Violent Deaths ...	0·31	0·19	0·27	0·52	0·33	0·53	—	0·35	(0·26)
36. Other Defined Causes ...	1·31	1·50	1·05	2·09	1·30	1·10	1·05	1·30	(1·66)
37. Ill-defined or Unknown ...	0·05	0·05	0·03	0·12	0·04	—	—	0·04	(0·04)
	11·58	8·54	7·15	24·00	12·51	19·25	11·47	12·71	(15·74)

* (   ) 1931-1936

INFANTILE MORTALITY

(a) TOTAL INFANTILE DEATHS IN DISTRICTS

	EUROPEAN			NATIVE			COLOURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	14	9	23	4	7	11	2	2	4	0	0	0	20	18	38
Location	0	0	0	86	80	166	8	2	10	4	1	5	98	83	81
Semi-Rural Areas	4	2	6	4	5	9	0	1	1	0	0	0	8	8	16
(A)	18	11	29	94	92	186	10	5	15	4	1	5	126	109	235
New Kleinfontein	0	0	0	4	2	6	0	0	0	0	0	0	4	2	6
Van Ryn Estates	0	0	0	2	2	4	0	0	0	0	0	0	2	2	4
Modder B	1	0	1	4	3	7	1	0	1	0	0	0	6	3	9
Modder Deep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Modder East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Modder	1	0	1	0	1	1	0	0	0	0	0	0	1	1	2
Van Ryn Deep	0	0	0	0	2	2	0	0	0	0	0	0	0	2	2
(B)	2	0	2	10	10	20	1	0	1	0	0	0	13	10	23
TOTAL	20	11	31	104	102	206	11	5	16	4	1	5	139	119	258

Infantile Mortality—Continued

(b) CAUSES OF INFANTILE DEATH

	EUROPEAN			NATIVE						COLOURED			INDIAN		
				MINES			LOC., ETC.								
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
010. Whooping Cough	0	1	1	0	0	0	2	3	5	0	0	0	0	0	0
022. Erysipelas	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0
025. Cerebro-Spinal Meningitis	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0
031. T.B. Meningitis	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
042. Syphilis	0	0	0	0	0	0	1	4	5	1	0	1	0	0	0
200. Purpura	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0
315. Mastoiditis	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
357. Heart Disease	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
402. Bronchitis	2	0	2	1	0	1	5	3	8	0	0	0	0	0	0
404. Broncho-Pneumonia ...	2	2	4	5	2	7	18	26	44	1	0	1	1	0	1
405. Lobar Pneumonia	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
406. Pneumonia	0	1	1	0	0	0	0	4	4	0	0	0	0	0	0
456. Enteritis	2	1	3	3	4	7	31	29	60	3	1	4	3	1	4
650. Osteomyelitis	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
700. Congenital Hydrocephalus	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
702. Congenital Heart	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
703. Other Congenital Malfn.	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0
750. Congenital Debility ...	5	1	6	0	1	1	7	7	14	1	0	1	0	0	0
751. Premature Birth	3	3	6	1	1	2	10	5	15	0	2	2	0	0	0
752 Injury at Birth	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
753. Other Infant Disease ...	1	1	2	0	1	1	16	9	25	2	1	3	0	0	0
859. Infanticide	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
	20	11	31	10	10	20	94	92	186	11	5	16	4	1	5

(c) DEATHS IN CERTAIN AGE GROUPS

	EUROPEAN			NATIVES						COLOURED			INDIAN			ALL RACES		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1st day	5	3	8	0	2	2	12	11	23	2	1	3	0	0	0	19	17	36
Rest of 1st week	3	2	5	1	1	2	18	6	24	1	1	2	0	0	0	23	10	33
Rest of 1st month	2	2	4	0	4	4	12	22	34	4	1	5	1	0	1	19	29	48
2nd 6th mths. (in.)	8	2	10	6	3	9	32	28	60	3	2	5	0	1	1	49	36	85
7th 12th mths. (in.)	2	2	4	3	0	3	20	25	45	1	0	1	3	0	3	29	27	56
TOTAL	20	11	31	10	10	10	94	92	186	11	5	16	4	1	5	139	119	258

(d) INFANTILE MORTALITY RATES

EUROPEAN:	Males	68.7	
	Females	60.0	
			54.67
NATIVE:	Males	539.0	
	Females	537.0	
			(538.0)
COLOURED:	Males:	256.0	
	Females	102.0	
			174.0
INDIAN:	Males	182.0	
	Females	48.0	
			116.2

(e) VARIOUS CAUSES OF INFANTILE DEATH

(Expressed as percentages)

	EURO-PEAN	NATIVE	COL-OURED	INDIAN	ALL RACES
Bowel Infections	10	32·5	25	80	30·0
Syphilis	0	2·5	6	0	2·0
Whooping Cough	3	2·5	0	0	2·0
Other Infectious Diseases	3	0·5	19	0	2·0
Bronchitis and Pneumonia	23	31·5	6	20	29·0
Congenital Debility ...	19	7·0	6	0	8·5
Premature Birth	19	8·0	13	0	10·0
Injury at Birth	0	0·5	0	0	0·5
Congenital Malformations	13	0	0	0	1·5
Other Infantile Diseases	10	15·0	25	0	14·5
	100	100·0	100	100	100·0

MATERNAL MORTALITY

(a) TOTAL DEATHS: IN CAUSES

	EURO-PEAN	NATIVE	COL-OURED	INDIAN	TOTAL
Puerperal Sepsis	1	2	0	0	3
TOTAL: Sepsis	1	2	0	0	3
Ectopic Gestation	0	2	0	0	2
Puerperal Haemorrhage	0	1	0	0	1
do. Albuminuria ...	1	0	0	0	1
Other Toxaemias	1	0	0	0	1
do. Accidents of Birth	0	2	0	0	2
do. Puerperal conditions	0	1	0	0	1
TOTAL: Non-Septic ...	2	6	0	0	8
TOTAL	3	8	0	0	11

(b) TOTAL DEATHS: IN AGE GROUPS

	SEPSIS					NON-SEPTIC				
	EURO-PEAN	NATIVE	COL-OURED	INDIAN	TOTAL	EURO-PEAN	NATIVE	COL-OURED	INDIAN	TOTAL
15–19	—	—	—	—	0	—	—	—	—	0
20–24	—	1	—	—	1	—	1	—	—	1
25–29	—	—	—	—	0	—	2	—	—	2
30–34	—	—	—	—	0	2	1	—	—	3
35–39	1	1	—	—	2	—	1	—	—	1
40–44	—	—	—	—	0	—	—	—	—	0
45–49	—	—	—	—	—	—	1	—	—	1
	1	2	0	0	3	2	6	0	0	8

(c) DEATH RATES PER 1,000 LIVE BIRTHS

	SEPSIS	NON-SEPSIS	ALL CAUSES
EUROPEAN	1·76	3·53	5·29
NATIVE	5·22	15·67	20·89
COLOURED	—	—	—
INDIAN	—	—	—
ALL RACES	2·76	7·37	10·14

PULMONARY TUBERCULOSIS

(a) NOTIFICATIONS: DISTRICTS

	EUROPEAN			NATIVE			COLOURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	4	0	4	2	0	2	1	0	1	—	—	—	7	0	7
Location	—	—	—	18	18	36	2	1	3	0	1	1	20	20	40
Semi-Rural Areas	—	—	—	0	1	1	—	—	—	—	—	—	0	1	1
(A)	4	0	4	20	19	39	3	1	4	0	1	1	27	21	48
New Kleinfontein	—	—	—	5	0	5	—	—	—	—	—	—	5	0	5
Van Ryn Estates	—	—	—	4	0	4	—	—	—	—	—	—	4	0	4
Modder B	—	—	—	3	0	3	—	—	—	—	—	—	3	0	3
Modder Deep	1	0	1	0	0	0	—	—	—	—	—	—	1	0	1
Modder East	—	—	—	0	0	0	—	—	—	—	—	—	0	0	0
New Modder	—	—	—	17	0	17	—	—	—	—	—	—	17	0	17
Van Ryn Deep	—	—	—	6	0	6	—	—	—	—	—	—	6	0	6
(B)	1	0	1	35	0	35	0	0	0	0	0	0	36	0	36
TOTAL	5	0	5	55	19	74	3	1	4	0	1	1	63	21	84

(b) DEATHS: IN DISTRICTS

	EUROPEAN			NATIVE			COLOURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	1	0	1	2	0	2	—	—	—	—	—	—	3	0	3
Location	—	—	—	17	16	33	0	1	1	0	1	1	17	18	35
Semi-Rural Areas	1	0	1	1	4	5	—	—	—	—	—	—	2	4	6
(A)	2	0	2	20	20	40	0	1	1	0	1	1	22	22	44
New Kleinfontein	—	—	—	4	0	4	—	—	—	—	—	—	4	0	4
Van Ryn Estates	—	—	—	—	—	—	—	—	—	—	—	—	0	0	0
Modder B	—	—	—	2	0	2	—	—	—	—	—	—	2	0	2
Modder Deep	—	—	—	—	—	—	—	—	—	—	—	—	0	0	0
Modder East	—	—	—	—	—	—	—	—	—	—	—	—	0	0	0
New Modder	1	0	1	4	1	5	—	—	—	—	—	—	5	1	6
Van Ryn Deep	—	—	—	3	0	3	—	—	—	—	—	—	3	0	3
(B)	1	0	1	13	1	14	0	0	0	0	0	0	14	1	15
TOTAL	3	0	3	33	21	54	0	1	1	0	1	1	36	23	59

(c) DEATH RATES

	DEATH RATES (Deaths per 1,000 population)	INCIDENCE RATES (Notifications per 1,000 population)
ALL RACES	0·76 (0·72)*	1·08
EUROPEANS	0·14 (0·26)	0·24
NATIVES—MINES	0·38 (0·38)	0·95
LOCATION, ETC.	2·33 (1·90)	2·27
COLOURED	0·53 (2·07)	2·26
INDIAN	1·04 (0·63)	1·03
ALL NON-EUROPEANS	0·99 (0·90)	1·08

* (   ) 1931-1936

LUNG DISEASES (Non-Tubercular)

(excl. Silicosis and Influenza.)

(a) TOTAL DEATHS: IN MONTHS

	EURO-PEAN			NATIVES						COL-OURED			INDIAN			ALL RACES		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
July	2	1	3	11	0	11	8	6	14	—	—	—	—	—	—	21	7	28
August	2	1	3	7	0	7	3	2	5	1	0	1	0	1	1	13	4	17
September	1	0	1	7	0	7	7	1	8	—	—	—	—	—	—	15	1	16
October	0	0	0	6	1	7	3	5	8	2	0	2	—	—	—	11	6	17
November	0	2	2	5	0	5	5	5	10	0	2	2	—	—	—	10	9	19
December	1	1	2	7	0	7	4	5	9	—	—	—	—	—	—	12	6	18
January	3	0	3	2	0	2	2	9	11	0	1	1	1	0	1	8	10	18
February	0	0	0	5	0	5	3	4	7	2	0	2	—	—	—	10	4	14
March	1	1	2	3	3	6	2	8	10	—	—	—	—	—	—	6	12	18
April	1	1	2	7	0	7	4	4	8	—	—	—	—	—	—	12	5	17
May	2	1	3	2	0	2	6	10	16	3	0	3	—	—	—	13	11	24
June	7	2	9	17	0	17	2	3	5	—	—	—	0	1	1	26	6	32
TOTAL	20	10	30	79	4	83	49	62	111	8	3	11	1	2	3	157	81	238

(b) TOTAL DEATHS: IN DISTRICTS

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	17	7	24	3	5	8	—	—	—	—	—	—	20	12	32
Location	—	—	—	44	53	97	6	3	9	1	2	3	51	58	109
Semi-Rural Areas	2	1	3	2	4	6	—	—	—	—	—	—	4	5	9
(A)	19	8	27	49	62	111	6	3	9	1	2	3	75	75	150
New Kleinfontein	—	—	—	18	0	18	—	—	—	—	—	—	18	0	18
Van Ryn Estates	—	—	—	6	0	6	—	—	—	—	—	—	6	0	6
Modder B	0	2	2	14	2	16	—	—	—	—	—	—	14	4	18
Modder Deep	—	—	—	4	0	4	—	—	—	—	—	—	4	0	4
Modder East	—	—	—	—	—	—	—	—	—	—	—	—	0	0	0
New Modder	1	0	1	26	1	27	2	0	2	—	—	—	29	1	30
Van Ryn Deep	—	—	—	11	1	12	—	—	—	—	—	—	11	1	12
(B)	1	2	3	79	4	83	2	0	2	0	0	0	82	6	88
TOTAL	20	10	30	128	66	194	8	3	11	1	2	3	157	81	238

(c) DEATH RATES PER 1,000 POPULATION PER ANNUM

		*
EUROPEAN	1.42	(1.41)
NATIVES: MINES	2.26	(2.41)
NATIVES: LOCATION, ETC.	6.39	(10.43)
COLOURED	6.21	(9.33)
INDIAN	3.10	(9.50)
ALL NON-EUROPEANS ...	3.67	(5.26)
ALL RACES	3.07	(4.19)

* ( ) 1931-1936

TOTAL OF ACUTE INTESTINAL INFECTIONS

(Including Enteric, Enteritis, Dysentery.)

(a) TOTAL DEATHS IN MONTHS

	EURO-PEAN			NATIVES						COL-OURED			INDIAN			ALL RACES		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
July	—	—	—	1	1	2	1	—	1	—	—	—	1	—	1	3	1	4
August	1	—	1	—	—	—	3	—	3	—	—	—	—	—	—	4	—	4
September	—	—	—	—	2	2	1	1	2	—	—	—	—	1	1	1	4	5
October	—	1	1	—	—	—	2	3	5	—	1	1	—	—	—	2	5	7
November	3	—	3	3	1	4	4	7	11	—	—	—	—	—	—	10	8	18
December	1	—	1	4	—	4	7	9	16	1	—	1	—	—	—	13	9	22
January	1	—	1	1	—	1	10	11	21	1	—	1	—	—	—	13	11	24
February	—	—	—	5	—	5	15	8	23	—	1	1	—	—	—	20	9	29
March	—	—	—	3	1	4	10	6	16	—	—	—	2	—	2	15	7	22
April	—	—	—	1	—	1	3	3	6	1	—	1	—	—	—	5	3	8
May	—	—	—	—	1	1	1	—	1	—	—	—	—	—	—	1	1	2
June	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	1	—	1
TOTAL	6	1	7	18	6	24	57	48	105	4	2	6	3	1	4	88	58	146

(b) TOTAL DEATHS IN DISTRICTS

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	2	1	3	3	1	4	1	—	1	—	—	—	6	2	8
Location	—	—	—	52	45	97	2	2	4	3	1	4	57	48	105
Semi-Rural Areas	2	—	2	2	2	4	—	—	—	—	—	—	4	2	6
(A)	4	1	5	57	48	105	3	2	5	3	1	4	67	52	119
New Kleinfontein	—	—	—	3	2	5	—	—	—	—	—	—	3	2	5
Van Ryn Estates	—	—	—	4	2	6	—	—	—	—	—	—	4	2	6
Modder B	—	—	—	2	—	2	—	—	—	—	—	—	2	—	2
Modder Deep	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Modder East	1	—	1	—	—	—	—	—	—	—	—	—	1	—	1
New Modder	1	—	1	5	1	6	1	—	1	—	—	—	7	1	8
Van Ryn Deep	—	—	—	4	1	5	—	—	—	—	—	—	4	1	5
(B)	2	—	2	18	6	24	1	—	1	—	—	—	21	6	27
TOTAL	6	1	7	75	54	129	4	2	6	3	1	4	88	58	146

(c) DEATH RATES PER 1,000 POPULATION PER ANNUM

		*
EUROPEAN	0.33	(0.89)
NATIVE: MINES	0.65	(1.16)
NATIVE: LOCATION, ETC.	6.10	(13.28)
COLOURED	3.39	(5.09)
INDIAN	4.13	(6.11)
ALL NON-EUROPEANS ...	2.45	(5.13)
ALL RACES	1.88	(3.96)

* (   ) 1931-1936

ENTERIC FEVER

(a) NOTIFICATIONS: DISTRICTS

	EUROPEAN			NATIVE			COLOURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	7	6	13	2	1	3	—	—	—	—	—	—	9	7	16
Location	—	—	—	6	7	13	—	—	—	—	—	—	6	7	13
Semi-Rural Areas	2	—	2	—	—	—	—	—	—	—	—	—	2	—	2
(A)	9	6	15	8	8	16	—	—	—	—	—	—	17	14	31
New Kleinfontein	—	—	—	4	—	4	—	—	—	—	—	—	4	—	4
Van Ryn Estates	—	—	—	12	—	12	—	—	—	—	—	—	12	—	12
Modder Bee	—	—	—	1	—	1	—	—	—	—	—	—	1	—	1
Modder Deep	—	—	—	3	—	3	—	—	—	—	—	—	3	—	3
Modder East	1	—	1	—	1	1	—	—	—	—	—	—	1	1	2
New Modder	1	—	1	12	1	13	1	—	1	—	—	—	14	1	15
Van Ryn Deep	—	—	—	12	—	12	—	—	—	—	—	—	12	0	12
(B)	2	—	2	44	2	46	1	—	1	—	—	—	47	2	49
TOTAL	11	6	17	52	10	62	1	—	1	—	—	—	64	16	80

(b) DEATHS: DISTRICTS

	EUROPEAN			NATIVE			COLOURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	1	—	1	—	—	—	—	—	—	—	—	—	1	—	1
Location	—	—	—	5	2	7	—	—	—	—	—	—	5	2	7
Semi-Rural Areas	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
(A)	1	—	1	5	2	7	—	—	—	—	—	—	6	2	8
New Kleinfontein	—	—	—	2	—	2	—	—	—	—	—	—	2	—	2
Van Ryn Estates	—	—	—	3	—	3	—	—	—	—	—	—	3	—	3
Modder B	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Modder Deep	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Modder East	1	—	1	—	—	—	—	—	—	—	—	—	1	—	1
New Modder	1	—	1	5	1	6	1	—	1	—	—	—	7	1	8
Van Ryn Deep	—	—	—	3	—	3	—	—	—	—	—	—	3	—	3
(B)	2	—	2	13	1	14	1	—	1	—	—	—	16	1	17
TOTAL	3	—	3	18	3	21	1	—	1	—	—	—	22	3	25

(c) VARIOUS RATES

	DEATH RATES (Deaths per 1,000 population)	INCIDENCE RATES (Notifications per 1,000 population)	CASE MORTALITY RATES (Deaths per 100 cases)
ALL RACES	0·32 *(0·79)	1·03	31·2 *(28·5)
EUROPEANS	0·14 (0·24)	0·81	17·6 (17·6)
NATIVES—MINES	0·38 (0·80)	1·25	30·4 (23·9)
LOCATION, ETC.	0·41 (1·72)	0·93	43·7 (49·5)
COLOURED	0·53 (0·36)	0·53	100·0 (10·0)
INDIANS	— (0·21)	—	— (4·4)

* ( ) 1931-1936

DIARRHOEA AND ENTERITIS

(Under 2 years)

(a) TOTAL DEATHS IN MONTHS

	EURO-PEAN			NATIVES						COL-OURED			INDIAN			ALL RACES		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
July	—	—	—	—	1	1	1	—	1	—	—	—	1	—	1	2	1	3
August	1	—	1	—	—	—	3	—	3	—	—	—	—	—	—	4	—	4
September	—	—	—	—	1	1	1	1	2	—	—	—	—	1	1	1	3	4
October	—	1	1	—	—	—	1	2	3	—	1	1	—	—	—	1	4	5
November	1	—	1	1	1	2	2	6	8	—	—	—	—	—	—	4	7	11
December	1	—	1	2	—	2	7	8	15	1	—	1	—	—	—	11	8	19
January	—	—	—	—	—	—	8	10	18	1	—	1	—	—	—	9	10	19
February	—	—	—	—	—	—	10	6	16	—	1	1	—	—	—	10	7	17
March	—	—	—	—	—	—	8	4	12	—	—	—	2	—	2	10	4	14
April	—	—	—	—	—	—	3	3	6	1	—	1	—	—	—	4	3	7
May	—	—	—	—	1	1	1	—	1	—	—	—	—	—	—	1	1	2
June	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL	3	1	4	3	4	7	45	40	85	3	2	5	3	1	4	57	48	105

(b) TOTAL DEATHS IN DISTRICTS

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	1	1	2	2	1	3	1	—	1	—	—	—	4	2	6
Location	—	—	—	41	37	78	2	2	4	3	1	4	46	40	86
Semi-Rural Areas	2	—	2	2	2	4	—	—	—	—	—	—	4	2	6
(A)	3	1	4	45	40	85	3	2	5	3	1	4	54	44	98
New Kleinfontein	—	—	—	—	1	1	—	—	—	—	—	—	—	1	1
Van Ryn Estates	—	—	—	1	2	3	—	—	—	—	—	—	1	2	3
Modder Bee	—	—	—	2	—	2	—	—	—	—	—	—	2	—	2
Modder Deep	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Modder East	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New Modder	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Van Ryn Deep	—	—	—	—	1	1	—	—	—	—	—	—	—	1	1
(B)	—	—	—	3	4	7	—	—	—	—	—	—	3	4	7
TOTAL	3	1	4	48	44	92	3	2	5	3	1	4	57	48	105

(c) DEATH RATES PER 1,000 POPULATION PER ANNUM

		*
EUROPEAN	0.19	(0.51)
NATIVE: MINES	0.19	(0.29)
NATIVE: LOCATION, ETC.	4.95	(9.57)
COLOURED	2.67	(4.36)
INDIAN	4.17	(4.84)
ALL NON-EUROPEAN	1.78	(3.37)
ALL RACES	1.35	(2.57)

* (   ) 1931-1936

CANCER

(a) TOTAL DEATHS: IN ORGANS AFFECTED

	EUROPEAN			NATIVES						COLOURED			INDIAN			ALL RACES		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Stomach	2	3	5	—	—	—	3	—	3	—	—	—	—	—	—	5	3	8
Lives	—	—	—	1	—	1	—	1	1	—	—	—	—	—	—	1	1	2
Pancreas	—	1	1	—	—	—	1	—	1	—	—	—	—	—	—	1	1	2
Colam	1	2	3	—	—	—	—	—	—	—	—	—	—	—	—	1	2	3
Rectum	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Peritoreum	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
TOTAL : I ...	4	7	11	1	—	1	4	1	5	—	—	—	—	—	—	9	8	17
Cervix	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	1	1
TOTAL : II ...	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	1	1
Prostate	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Testis	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
TOTAL : IV ...	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2
Mouth	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Tongue	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	1	—	1
Brain	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	1	—	1
Myelosarcome ...	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
TOTAL : VI ...	2	—	2	1	—	1	1	—	1	—	—	—	—	—	—	4	—	4
TOTAL	8	7	15	2	—	2	5	2	7	—	—	—	—	—	—	15	9	24

(b) TOTAL DEATHS: IN AGE GROUPS

	EUROPEAN			NATIVE						COLOURED			INDIAN			TOTAL		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
0–24	—	—	—	2	—	2	—	—	—	—	—	—	—	—	—	2	—	2
25–44	2	1	3	—	—	—	1	—	1	—	—	—	—	—	—	3	1	4
45–64	4	3	7	—	—	—	3	1	4	—	—	—	—	—	—	7	4	11
65 up	2	3	5	—	—	—	1	1	2	—	—	—	—	—	—	3	4	7
TOTAL	8	7	15	2	—	2	5	2	7	—	—	—	—	—	—	15	9	24

(c) DEATH RATES PER 1,000 POPULATION PER ANNUM

		*
EUROPEAN	0.71	(0.65)
NATIVE: MINES	0.05	(0.11)
NATIVE: LOCATION, ETC.	0.41	
COLOURED	0.00	(0.85)
INDIAN	0.16	(0.13)
ALL RACES	0.31	(0.28)

* ( ) 1931-1936

MEASLES

(a) NOTIFICATIONS: IN DISTRICTS

	EUROPEAN			NATIVE			COLOURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	12	12	24	—	—	—	—	—	—	—	—	—	12	12	24
Location	—	—	—	—	1	1	—	—	—	—	—	—	—	1	1
Semi-Rural Areas	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
(A)	12	12	24	—	1	1	—	—	—	—	—	—	12	13	25
New Kleinfontein	—	—	—	17	—	17	—	—	—	—	—	—	17	—	17
Van Ryn Estates	—	—	—	1	—	1	—	—	—	—	—	—	1	—	1
Modder Bee	7	1	8	6	—	6	—	—	—	—	—	—	13	1	14
Modder Deep	—	1	1	—	—	—	—	—	—	—	—	—	—	1	1
Modder East	1	—	1	—	—	—	—	—	—	—	—	—	1	—	1
New Modder	—	—	—	38	—	38	—	—	—	—	—	—	38	—	38
Van Ryn Deep	—	—	—	16	—	16	—	—	—	—	—	—	16	—	16
(B)	8	2	10	78	—	78	—	—	—	—	—	—	86	2	88
TOTAL	20	14	34	78	1	79	—	—	—	—	—	—	98	15	113

(b) DEATH RATES

(Deaths per 1,000 population.)

		*
ALL RACES	0.03	(0.06)
EUROPEAN	—	(0.04)
NATIVE: MINES	0.05	(0.03)
NATIVE: LOCATION, ETC.	—	(0 14)
COLOURED	—	(0.24)
INDIAN	—	(0.00)
ALL NON-EUROPEAN	0.04	(0.07)

* (   ) 1931-1936

CEREBRO-SPINAL MENINGITIS

(a) NOTIFICATIONS: IN DISTRICTS

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	1	1	2	—	—	—	—	1	1	—	—	—	1	2	3
Location	—	—	—	1	1	2	—	—	—	—	—	—	1	1	2
Semi-Rural Areas	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
(A)	1	1	2	1	1	2	—	1	1	—	—	—	2	3	5
New Kleinfontein	—	—	—	1	—	1	—	—	—	—	—	—	1	—	1
Van Ryn Estates	—	—	—	8	—	8	—	—	—	—	—	—	8	—	8
Modder B	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Modder Deep	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Modder East	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New Modder	1	—	1	5	—	5	—	—	—	—	—	—	6	—	6
Van Ryn Deep	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
(B)	1	—	1	14	—	14	—	—	—	—	—	—	15	—	15
TOTAL	2	1	3	15	1	16	—	1	1	—	—	—	17	3	20

(b) DEATHS: IN AGE GROUPS

	EURO-PEAN			NATIVES						COL-OURED			INDIAN			ALL RACES		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
0–9	1	—	1	—	—	—	—	—	—	1	1	2	—	—	—	2	1	3
10–14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15–19	—	—	—	2	—	2	—	—	—	—	—	—	—	—	—	2	—	2
20–24	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
25 up	—	—	—	5	—	5	—	1	1	—	—	—	—	—	—	5	1	6
TOTAL	2	—	2	7	—	7	—	1	1	1	1	2	—	—	—	10	2	12

(c)	DEATH RATES (Deaths per 1,000 population)	INCIDENCE RATES (Notifications per 1,000 population)	CASE MORTALITY RATES (Deaths per 100 cases)
ALL NON-EUROPEANS ...	0·39 (10··)	1·11	34·9 (30·3)
ALL RACES	0·15 (0·13)P	0·26	60%
EUROPEANS	0·09 (0·07)	0·14	66%
NATIVES—MINES	0·19 (0·18)	0·38	56%
LOCATION, ETC.	0·06 (0·08)	0·12	
COLOURED	1·07 (0·13)	0·05	
INDIAN	— (—)	—	—
ALL NON-EUROPEANS ...	0·18 (0·14)	0·30	56%

* (   ) 1931-1936

VIOLENCE

(a) TOTAL DEATHS: CAUSES

	EURO-PEAN			NATIVES						COL-OURED			INDIAN			ALL RACES		
				MINES			LOC., ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Suicide	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2
Infanticide	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	1	1
Homicide	—	—	—	3	—	3	4	1	5	—	—	—	—	—	—	7	1	8
Burns	—	—	—	—	—	—	2	1	3	—	—	—	—	—	—	2	1	3
Drowning	1	—	1	3	—	3	—	—	—	—	—	—	—	—	—	4	—	4
Mine Accidents ...	1	—	1	42	—	42	—	—	—	—	—	—	—	—	—	43	—	43
Machine Accidents	—	—	—	1	—	1	—	—	—	1	—	1	—	—	—	2	—	2
Rail Accidents ...	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Road Accidents	3	—	3	11	—	11	2	—	2	1	—	1	—	—	—	17	—	17
Lightning	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	1	—	1
Other accidents ...	2	—	2	2	—	2	—	—	—	—	—	—	—	—	—	4	—	4
TOTAL	10	—	10	63	—	63	8	3	11	2	—	2	—	—	—	83	3	86

(b) TOTAL DEATHS: IN DISTRICTS

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			ALL RACES		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Township	8	—	8	—	—	—	1	—	1	—	—	—	9	—	9
Location	—	—	—	8	3	11	—	—	—	—	—	—	8	3	11
Semi-Rural Areas	—	—	—	—	—	—	1	—	1	—	—	—	1	—	1
(A)	8	—	8	8	3	11	2	—	2	—	—	—	18	3	21
New Kleinfontein	—	—	—	10	—	10	—	—	—	—	—	—	10	—	10
Van Ryn Estates	1	—	1	11	—	11	—	—	—	—	—	—	12	—	12
Modder B	—	—	—	8	—	8	—	—	—	—	—	—	8	—	8
Modder Deep	—	—	—	5	—	5	—	—	—	—	—	—	5	—	5
Modder East	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New Modder	1	—	1	21	—	21	—	—	—	—	—	—	22	—	22
Van Ryn Deep	—	—	—	8	—	8	—	—	—	—	—	—	8	—	8
(B)	2	—	2	63	—	63	—	—	—	—	—	—	65	—	65
TOTAL	10	—	10	71	3	74	2	—	2	—	—	—	83	3	86

(c) DEATH RATES PER 1,000 POPULATION

	SUICIDE	HOMICIDE	ROAD ACCIDENTS	MINE ACCIDENTS	OTHER VIOLENCE	TOTAL	
All Races	0·03	0·10	0·21	0·55	0·21	1·10	*(1·42)
European	0·09	—	0·14	0·05	0·19	0·47	(0·76)
Native—Mines	—	0·08	0·30	1·14	0·19	1·71	(2·02)
Location, etc.	—	0·29	0·12	—	0·23	0·64	(1·00)
Coloured	—	—	0·53	—	0·53	1·06	(1·94)
Indian	—	—	—	—	—	—	(0·42)
All Non-European ...	—	0·14	0·25	0·74	0·21	1·34	(1·67)

* (   ) 1931-1936

REMOVALS TO HOSPITAL: INFECTIOUS DISEASES

I.—BOKSBURG-BENONI HOSPITAL

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			ALL RACES
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	
Pulmonary Tuberculosis	—	—	—	10	11	21	1	1	2	—	—	—	23
Enteric Fever	2	2	4	8	10	18	—	—	—	—	—	—	22
Erysipelas	3	6	9	2	1	3	—	—	—	—	—	—	12
Measles	1	6	7	—	—	—	—	—	—	—	—	—	7
Cerebro-Spinal Fever	1	—	1	1	2	3	—	—	—	—	—	—	4
Puerperal Fever	—	—	—	—	3	3	—	—	—	—	—	—	3
Enteric "Carriers"	—	—	—	2	—	2	—	—	—	—	—	—	2
G. C. Ophthalmia	—	—	—	1	—	1	—	—	—	—	—	—	1
Mumps	—	—	—	1	—	1	—	—	—	—	—	—	1
TOTAL	7	14	21	25	27	52	1	1	2	—	—	—	75

II.—JOHANNESBURG ISOLATION HOSPITAL

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			ALL RACES
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	
Erysipelas	2	—	2	—	—	—	—	—	—	—	—	—	2
Scarlet Fever	1	11	12	—	—	—	—	—	—	—	—	—	12
TOTAL	3	11	14	—	—	—	—	—	—	—	—	—	14

III.—SPRINGKELL TUBERCULOSIS HOSPITAL

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			ALL RACES
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	
Pulmonary Tuberculosis	2	1	3	—	—	—	—	—	—	—	—	—	3
TOTAL	2	1	3	—	—	—	—	—	—	—	—	—	3

IV.—RIETFONTEIN TUBERCULOSIS HOSPITAL

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			ALL RACES
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	
Pulmonary Tuberculosis	—	—	—	5	4	9	1	—	1	—	—	—	10

V.—RIETFONTEIN ISOLATION HOSPITAL

	EURO-PEAN			NATIVE			COL-OURED			INDIAN			ALL RACES
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	
Plague Contacts	3	2	5	1	—	1	—	—	—	—	1	1	7
Measles	—	—	—	1	—	1	—	—	—	—	—	—	1
Erysipelas	—	—	—	—	1	1	—	—	—	—	—	—	1
Syphilis	6	2	8	68	52	120	3	2	5	—	—	—	133
Gonorrhoea	7	3	10	20	7	27	2	—	2	—	—	—	39
G. C. Ophthalmia	—	—	—	1	2	3	—	—	—	—	—	—	3
Other Venereal Disease	—	—	—	1	—	1	1	—	1	—	—	—	2
TOTAL	16	7	23	92	62	154	6	2	8	—	1	1	186

VENEREAL DISEASES CLINIC (LOCATION)

Total injections (syphilis) given—3,828.

Total persons attending:

	NATIVE		COLOURED		INDIAN		TOTAL
	Male	Female	Male	Female	Male	Female	
Children	62	122	18	14	5	2	223
Adults	18	267	1	7	—	—	293
TOTAL	80	389	19	21	5	2	516

MATERNITY AND CHILD WELFARE

	EUROPEAN	NATIVE	COLOURED	INDIAN	TOTAL
INFANT CLINICS:					
New Cases	140	—	—	—	140
Attendances	835	—	—	—	835
ANTE-NATAL CLINICS ...	—	—	—	—	—
HOME VISITS:					
First Visits	359	251	223	6	839
Re-visits	1,515	1,335	1,014	39	3,903
Ante-Natal	105	168	124	8	405
Protected Infants ...	12	1	—	—	13
Still Births	7	9	7	—	23
Infant Mortality	20	83	37	2	142
Infectious Diseases ...	102	6	1	—	109
Special Investigations...	68	—	—	—	68
Bag Inspections	56	—	—	—	56
Nursing Homes	14	—	—	—	14
Shops	227	—	—	—	227
Children's Aid	19	—	—	—	19
General Cases	—	62	—	—	62
CONFINEMENTS:					
Total	—	84	10	—	94
Visits	—	865	102	—	967
TOTAL HOME VISITS	2,504	2,780	1,508	55	6,847

NOTIFICATIONS OF INFECTIOUS DISEASE

	EUROPEAN			NATIVES						COLOURED			INDIAN			ALL RACES		
				MINES			LOC.*l*;ETC.											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Enteric Fever ...	11	6	17	44	2	46	8	8	16	1	—	1	—	—	—	64	16	80
T.B., Lungs ...	5	—	5	35	—	35	20	19	39	3	1	4	—	1	1	63	21	84
,, other ...	—	—	—	2	—	2	2	1	3	—	—	—	—	—	—	4	1	5
Cerebral Spinal Meningitis ...	2	1	3	14	—	14	1	1	2	—	1	1	—	—	—	17	3	20
Acute Poliomyelitis	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Enceph. Lethargica	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Scarlet Fever ...	3	14	17	—	—	—	—	—	—	—	—	—	—	—	—	3	14	17
Diphtheria	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Whooping Cough*	2	12	14	—	—	—	2	1	3	1	—	1	—	—	—	5	13	18
Measles*	20	14	34	78	—	78	—	1	1	—	—	—	—	—	—	98	15	113
Erysipelas	8	5	13	6	—	6	—	—	—	1	—	1	—	—	—	15	5	20
Ophth. Neonatorum	1	1	2	1	—	1	—	1	1	—	—	—	—	—	—	2	2	4
Puerperal Fever...	—	2	2	—	—	—	—	2	2	—	1	1	—	1	1	—	6	6
Tick Typhus Fever	2	—	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2
Pneumonic Plague	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1

x From 1st of December, only.

ROUTINE SANITATION AND HEALTH INSPECTIONS

	LOCATION	TOWN, ETC.	TOTAL
Notices served	257	1,454	1,711
Native Quarters—Rooms Demolished	506	—	506
Urban Areas Act—Licences, Native Quarters	93	8	101
Native Quarters—Dirty or Verminous	9	47	56
Defective Construction	—	90	90
Native Compounds	—	133	133
Premises—Dirty or Verminous	—	249	249
Constructional Repairs	—	295	295
Routine House Inspections	310	2,271	2,581
Routine Stand Inspections	869	732	1,601
Slop Water Receptacles—Absent/Insufficient	—	35	35
Broken/Defective	10	120	130
Refuse Receptacles—Absent/Insufficient	17	132	149
Broke/JDefective	126	281	407
Accumulations of Refuse and Dirty Yards	—	339	339
Drains—Choked or Dirty	24	99	123
Defective/Insufficient	3	140	143
Earth Closets—Dirty	60	66	126
Defective or Insufficient	83	232	315
Water Closets—Dirty	—	1	1
Disposal of Waste Water	2	44	46
Stables—Dirty	36	39	75
Keeping of Animals	25	27	52
Rodents	—	68	68
Flies	12	232	244
Mosquitoes	—	40	40
Fleas	—	2	2
White Ants	—	1	1
Clean Homes Competition	21	—	21
Other Nuisances	44	296	340
Re-Inspections	1,962	3,154	5,116
Interviews	511	645	1,156
Complaints Received and Dealt With	27	444	471
Housing and Drainage Plans	163	378	541
Cyanide Fumigations	13	276	289
Infectious Disease Enquiries	104	336	440
Houses Disinfected	—	19	19
Cases removed to Hospital	—	32	32
Notices of Landing (Smallpox, etc., Contacts)	11	—	11
Mine Offices—Posters and Pamphlets	—	5	5
Widal Tests—Food Handlers	41	—	41
Market Inspections	—	266	266
Butchers	64	629	693
Bakers	3	92	95
Kaffir Eating Houses	24	1,076	1,100
Dairies and Cowkeepers	6	851	857
Fishmongers	—	106	106
Delicacy Stores	—	25	25
Tea Rooms, Fruiters, Grocers	95	1,520	1,615
Hotel Dining Rooms and Restaurants	1	326	327
Lodging and Boarding Houses	55	230	285
Sweeteries, Mineral Water and Ice Works	—	37	37
General Dealers	19	559	578
Hairdressers	26	137	163
Other Trades Premises	—	374	374
Hawkers and Pedlars	43	182	225
Launderies	—	22	22
	5,675	19,194	24,869

MUNICIPAL ABATTOIRS.

	Animals Slaughtered
Oxen	30,954
Sheep	54,177
Calves	409
Pigs	1,126
TOTAL	86,666

	Income
Slaughtering	£5,992
Cold Storage	1,591
Rents and Disinfections	465
Govt. Levy (2½% Refund)	102
By-Products Sale	1,394
Total Income	£9,544
Total Expenditure	£12,116

By-Products (in lbs.)

	Blood Meal	Meat Meal	Fat
Balance, 1st July, 1936	39,700	2,600	750
Produced	119,950	152,550	32,250
Total	159,650	155,150	33,000
Sales	152,250	152,550	29,595
Stock on hand 30th June, 1937	7,400	2,600	3,405

"Measles" and Tuberculosis Condemnations and Detentions

	"MEASLES"				TUBERCULOSIS	
	Cold Storage		Condemned		Condemned	
	Total	% Age	Total	% Age	Total	% Age
Oxen	490	1.58	38	0.12	10	0.03
Pigs	—	—	24	2.13	—	—

"Measly" Carcases to Cold Storage

	Number	Weight (lbs.)
Local	490	276,175
Imported	364	196,050

CONDEMNED FOODSTUFFS.

(From Foodshops, Municipal Market, etc.)

FRUIT AND VEGETABLES

Apples, 25 Baskets, 6 Boxes.
Apricots, 29 Boxes.
Avocado Pears, 19 Boxes.
Bananas, 10 Boxes.
Green Beans, 23 Pockets.
Cabbages, 11 Bags.
Cucumbers, 18 Pockets.
Dates, 2 Packets.
Grape Fruit, 69 Pockets.
Grenadillas, 5 Trays, 10 Cases.
Lemons, 38 Pockets.
Lettuce, 3 Crates.
Limes, 12 Pockets.
Naartjes, 1 Box, 1 Tray.
Oranges, 1 Box, 3 Cases, 28 Pockets.
Paw Paws, 151 Boxes, 7½ Crates.
Pears, 12 Boxes, 4 Cases, 5 Baskets.
Green Peas, 54 Pockets.
Plums, 2 Boxes.
Potatoes, 14 Bags.
Prunes, 25 Boxes.
Tomatoes, 176 Boxes, 1 Tray.
Water Melon, 1.

VARIOUS FRESH FOODS

Eggs, 30 dozen.
Dressed Poultry, 100.
Dressed Turkeys, 3.
Castor Sugar, 2 bottles.
Crystalised Cherries, 6 lbs.
Peppermint Chocolates, 2 lbs.

TINNED FOODS

Apricot Jam, 4-1 lb., 2-2 lb. tins.
Gooseberry Jam, 1 tin.
Grape Fruit Jam, 4-1 lb. tins.
Jam, 1 tin.
Marmalade, 7 tins.
Strawberry Jam, 2 tins.
Asparagus, 1-1 lb. tin.
Red Cherries, 3-2 lb. tins.
Fruit Salad, 12-1 lb. tins.
Passion Fruit, 1 tin.
Peaches, 4-1 lb. tins.
Pears, 13-1 lb. tins.
Plums, 3-2 lb. tins.
Raspberry, 5 tins.
Sauerkraut, 2 tins.
Sauerkraut and Cucumber, 52 tins.
Spaghetti, 2 tins.
Sweet Corn, 1 tin.
Bloater Paste, 1 jar.
Fish, 109 tins, 1 box.
Herrings, 7 tins.
Lobster, 1 tin.
Salmon, 20 tins.
Sardines, 216 tins.
Sheeps' Tongues, 1 tin.
Potted Tongues, 1 tin.
Condensed Milk, 146 tins.

FOODS, DRUGS, ETC. ACT— SAMPLES FOR CHEMICAL ANALYSIS

Milk—54 samples taken.

Milk Fat above 4%	7
Milk Fat between 3.0% and 3.5%,	17
Milk Fat between 3.5% and 4%,	28
Milk Fat below 3%	2

Other Foods—Total 22.

Mince Meat, 9; Polony, 4; Dripping, 4; Mixed Coffee, 2; Condensed, 1; Ice Cream, 1; Sausage, 1.

5 Samples of mince meat were adulterated in that they contained Sulphur Dioxide, a preservative prohibited under Section 14 (4) of the Act, No. 13 of 1929.

SAMPLES FOR BACTERIOLOGICAL ANALYSIS.

Ice Cream—4 Samples taken.

Total Count less than 5,000 organisms per c.c. and no B. Welchii in 15 c.c.:—4.

Milk—44 Samples taken.

Total Count less than 100,000 orgs. per c.c.	11
Total Count 100,000 — 200,000 orgs. per c.c.	7
Total Count more than 200,000 orgs. per c.c.	26-44
B. Welchii present in 15 c.c.	15
B. Welchii absent in 15 c.c.	29-44

PROSECUTIONS.

LAW OFFENCE

Food and Drugs Act Sec. 14 (4)—Adulterated Mince Meat.
Result.—Guilty—Fined £1.
Food and Drugs Act Sec. 14 (4)—Adulterated Mince Meat.
Result.—Guilty—Fined £1.
Food and Drugs Act Sec. 14 (4)—Adulterated Mince Meat.
Result.—Guilty—Fined £1.
Food and Drug Act Sec. 7 (1)—Adulterated Milk.
Guilty—Fined £15.
Food and Drug Act Sec. 7 (1)—Adulterated Milk.
Guilty—Fined £3.
Abattoir By-Laws—Sale of Unstamped Bacon.
Guilty—Fined £2.
Kaffir Eating-House By-Laws—Unclean Eating-House.
Guilty—Fined £4.

LICENSING OF FOOD SHOPS.

Applications received	1,055
Applications approved without condition	594
Applications approved—subject to requirements since carried out	401
Application not in order	29
Applications withdrawn	31

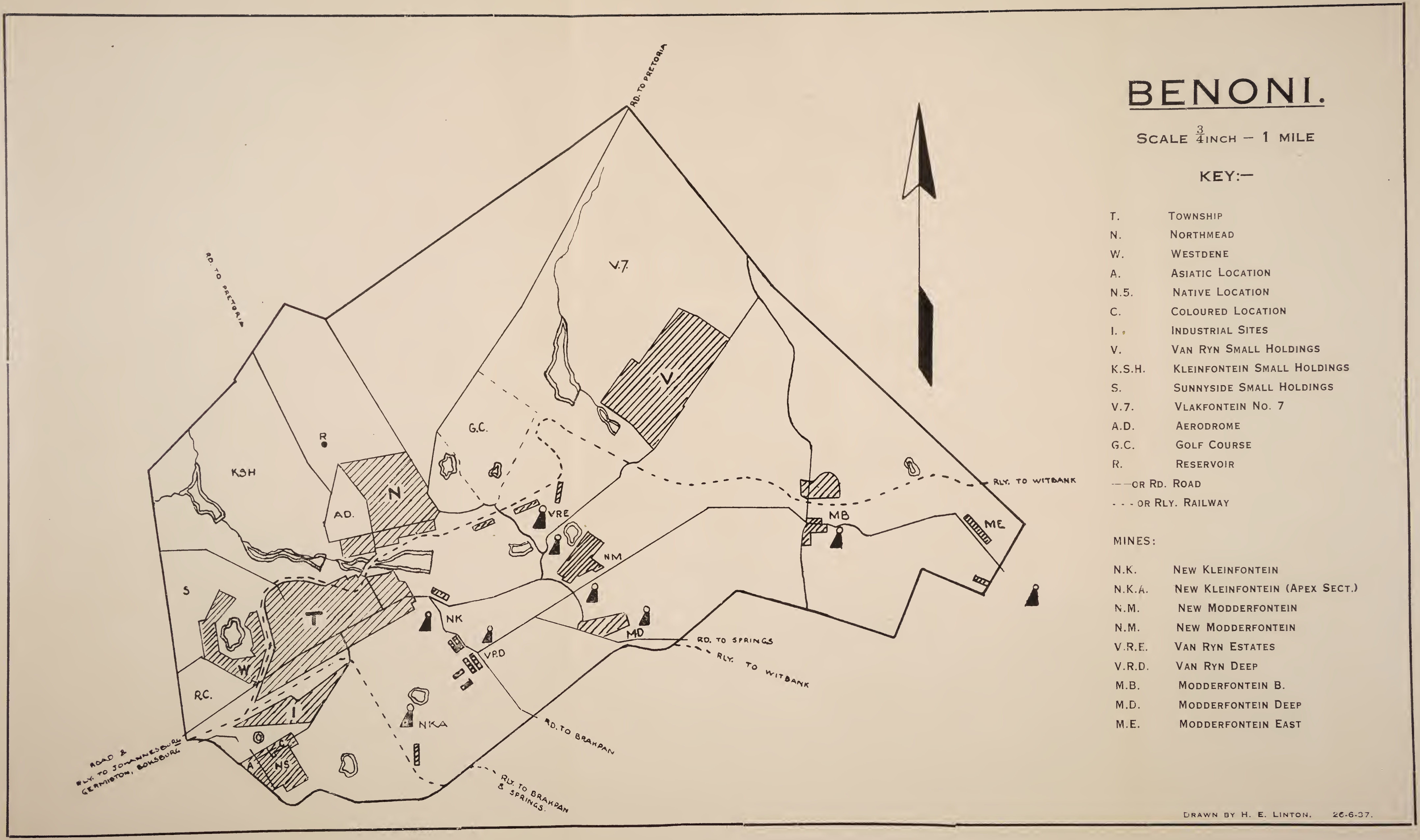
PLAGUE CONTROL WORK.

Number of holes treated	12,416
Amount of cyano-gas used	158½ lbs.
Amount of poisoned wheat used . . .	95½ lbs.
Amount of capex cartridges used	455
Number of Rodents killed:—	
Domestic Rats	3,502
Domestic Mice	1,794
Gerbilles	682
Striped Mice	51
White Footed Rats	5
Multimammate Mice	108
Taterona Lobengula	1
Mus Musculus	1
Ratus Ratus	1
Malaco-thrix	1
TOTAL	6,146

MEMORANDA

MEMORANDA

MEMORANDA


BENONI.
SCALE $\frac{3}{4}$INCH – 1 MILE
KEY:–
T. TOWNSHIP
N. NORTHMEAD
W. WESTDENE
A. ASIATIC LOCATION
N.S. NATIVE LOCATION
C. COLOURED LOCATION
I. INDUSTRIAL SITES
V. VAN RYN SMALL HOLDINGS
K.S.H. KLEINFONTEIN SMALL HOLDINGS
S. SUNNYSIDE SMALL HOLDINGS
V.7. VLAKFONTEIN NO. 7
A.D. AERODROME
G.C. GOLF COURSE
R. RESERVOIR
—— OR RD. ROAD
- - - OR RLY. RAILWAY
MINES:
N.K. NEW KLEINFONTEIN
N.K.A. NEW KLEINFONTEIN (APEX SECT.)
N.M. NEW MODDERFONTEIN
N.M. NEW MODDERFONTEIN
V.R.E. VAN RYN ESTATES
V.R.D. VAN RYN DEEP
M.B. MODDERFONTEIN B.
M.D. MODDERFONTEIN DEEP
M.E. MODDERFONTEIN EAST
RD. TO PRETORIA
RD. TO PRETORIA
V.7
V
G.C.
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RD. TO SPRINGS
RLY. TO WITBANK
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A
NS
RD. TO BRAKPAN
RLY. TO BRAKPAN & SPRINGS
ROAD & RLY. TO JOHANNESBURG GERMISTON, BOKSBURG
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